Adopted Levels, Gammas

Type	Author	History Citation	Literature Cutoff Date
Update	Balraj Singh		03-Aug-2005

Q(β^-)=−7.26×10^3 *6*; S(n)=1.083×10^4 *4*; S(p)=5.99×10^3 *4*; Q(α)=483 *21* 2012Wa38
Note: Current evaluation has used the following Q record −7260 60 *10830* 40 *5990* 30 *503* 23 2003Au03.
Additional information 1.
Mass measurement: 2001Bo59.

^{132}Ce Levels

Cross Reference (XREF) Flags

- A ^{132}Pr ε decay (1.6 min)
- B ^{132}Ce IT decay (9.4 ms)
- C ^{100}Mo(^{36}S,4nγ)
- D ^{100}Mo(^{36}S,4nγ):SD

Single-particle labels for band assignments (1997Pa15):

A: π3/2[411],	α=+1/2	a: ν7/2[404],	α=+1/2
B: π3/2[411],	α=-1/2	b: ν7/2[404],	α=-1/2
C: π5/2[413],	α=+1/2	c: ν1/2[400],	α=+1/2
D: π5/2[413],	α=-1/2	d: ν1/2[400],	α=-1/2
E: π3/2[541],	α=-1/2	e: ν9/2[514],	α=-1/2
F: π3/2[541],	α=+1/2	f: ν9/2[514],	α=+1/2
G: π1/2[550],	α=-1/2	g: ν7/2[523],	α=-1/2
H: π1/2[550],	α=+1/2	h: ν7/2[523],	α=+1/2

E(level)[†]	J$^\pi$[‡]	T$_{1/2}$[#]	XREF	Comments
0.0[&]	0$^+$	3.51 h *11*	ABC	%ε+%β^+=100 T$_{1/2}$: from 1976Ge10. Other: 4.2 h *2* (1960Wa03).
325.34[&] *8*	2$^+$	40 ps *3*	ABC	T$_{1/2}$: from recoil-distance method, as adopted by 2001Ra27. J$^\pi$: E2 γ to 0$^+$.
822.17[b] *8*	2$^+$		ABC	J$^\pi$: $\gamma\gamma(\theta)$ in ^{132}Pr ε decay.
858.82[&] *9*	4$^+$	3.2 ps *7*	ABC	J$^\pi$: ΔJ=2, E2 γ to 2$^+$.
1158.40[c] *10*	0$^+$		A	J$^\pi$: from $\gamma\gamma(\theta)$.
1199.45[b] *9*	3$^+$		ABC	J$^\pi$: from $\gamma\gamma(\theta)$ in ^{132}Pr ε decay.
1384.06[b] *9*	4$^+$		ABC	J$^\pi$: from $\gamma\gamma(\theta)$ in ^{132}Pr ε decay.
1497.08[c] *9*	2$^+$		A	J$^\pi$: M1+E2 γ's to 2$^+$ and 3$^+$.
1542.58[&] *16*	6$^+$	0.7 ps *4*	ABC	J$^\pi$: ΔJ=2, E2 γ to 4$^+$.
1655.93 *9*			A	J$^\pi$: γ's to 3$^+$ and 4$^+$; 5$^+$ is possibly consistent with $\gamma\gamma(\theta)$. E(level): possibly a doublet.
1714.15 *13*			A	J$^\pi$: γ to 2$^+$.
1734.65 *9*	2$^+$		A	J$^\pi$: from $\gamma\gamma(\theta)$.
1808.38 *10*	(2$^+$,3,4$^+$)		A	J$^\pi$: γ's to 2$^+$ and 4$^+$.
1814.69[b] *15*	(5$^+$)		AB	J$^\pi$: γ's to 3$^+$ and 4$^+$; possible band assignment.
1922.75 *10*	(2$^+$,3,4$^+$)		A	J$^\pi$: γ's to 2$^+$ and 4$^+$.
1931.97[c] *9*	(4$^+$)		A	J$^\pi$: (M1+E2) γ to 4$^+$; γ to 2$^+$; possible band assignment.
1950.66 *9*	(2$^+$,3,4$^+$)		A	J$^\pi$: γ's to 2$^+$ and 4$^+$.
1996.46 *13*			A	J$^\pi$: γ to 2$^+$.
2023.4[b] *4*	(6$^+$)		C	J$^\pi$: (M1+E2) γ to 6$^+$; γ to 4$^+$.
2038.84 *10*	(2$^+$ to 5$^+$)		A	J$^\pi$: γ's to 3$^+$ and 4$^+$.
2048.19[d] *13*	5$^-$		C	J$^\pi$: ΔJ=1, E1+M2 γ to 4$^+$; ΔJ=1 γ to 6$^+$.
2049.82? *13*			A	J$^\pi$: γ to 4$^+$.

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Adopted Levels, Gammas (continued)

^{132}Ce Levels (continued)

E(level)[†]	Jπ[‡]	$T_{1/2}$[#]	XREF	Comments
				E(level): this level may be the same as 2048.2 from in-beam γ ray data, but no 505.3γ is reported in ^{132}Pr ε decay.
2096.83 *10*	(2⁺,3,4⁺)		A	Jπ: γ′s to 2⁺ and 4⁺.
2138.4[e] *3*	(4⁻)		A C	Jπ: ΔJ=2 γ from 6⁻; γ to 4⁺.
2145.66 *13*			A	Jπ: γ to 2⁺.
2169.31 *11*			A	Jπ: γ to 2⁺.
2189.23 *13*			A	Jπ: γ to 4⁺.
2295.66 *13*			A	Jπ: γ to 2⁺.
2329.58[&] *19*	8⁺	0.69 ps *14*	BC	Jπ: ΔJ=2, E2 γ to 6⁺.
2330.33 *13*			A	Jπ: γ to 4⁺.
2341.15[j] *21*	(8⁻)	9.4 ms *3*	ABC	%IT=100 Jπ: γ′s to 6⁺ and (5⁺); isomer identified in other Z=54-64 even A nuclides. Reduced hindrance factors and systematics (2001Mo05) are consistent with 8⁻ isomer.
2364.93 *10*			A	Jπ: γ to 4⁺.
2379.26 *13*			A	Jπ: γ to 2⁺.
2379.74 *14*			A	
2431.87[d] *15*	7⁻		C	Jπ: ΔJ=2, E2 γ to 5⁻; ΔJ=1, E1 γ to 6⁺.
2450.73 *13*			A	Jπ: γ to 4⁺.
2464.56 *13*			A	Jπ: γ to 2⁺.
2469.35[e] *21*	6⁻		C	Jπ: ΔJ=0, E1 γ to 6⁺; γ to 5⁻.
2482.98 *10*	(2⁺,3,4⁺)		A	Jπ: γ′s to 2⁺ and 4⁺.
2508.70 *10*	(2⁺,3,4⁺)		A	Jπ: γ′s to 2⁺ and 4⁺.
2554.10 *10*			A	Jπ: γ′s to 2⁺ and 3⁺.
2562.55 *13*			A	Jπ: γ to 2⁺.
2577.81 *11*			A	Jπ: γ′s to 2⁺ and 3⁺.
2606.18 *11*			A	Jπ: γ to 2⁺.
2624.0[f] *3*	7⁻		C	Jπ: ΔJ=1, E1 γ to 6⁺.
2644.66 *13*			A	Jπ: γ to 2⁺.
2650.47 *13*			A	Jπ: γ to 3⁺.
2714.22[e] *22*	8⁻		C	Jπ: ΔJ=2, E2 γ to 6⁻; ΔJ=1 γ to 7⁻.
2719.47 *13*			A	Jπ: γ to 3⁺.
2728.5[b] *5*	(8⁺)		C	Jπ: γ to (6⁺).
2740.65 *9*	(2⁺,3,4⁺)		A	Jπ: γ′s to 2⁺ and 4⁺.
2758.56 *13*			A	Jπ: γ to 2⁺.
2761.83 *13*			A	Jπ: γ to 4⁺.
2764.6[k] *4*	(9⁻)		C	Jπ: γ to (8⁻).
2825.83 *13*			A	Jπ: γ to 4⁺.
2835.84 *13*	(2⁺,3,4⁺)		A	Jπ: γ′s to 2⁺ and 4⁺.
2857.55 *14*			A	Jπ: γ to 4⁺.
2864.13 *13*			A	Jπ: γ to 4⁺.
2866.93 *14*	(1,2⁺)		A	Jπ: γ to 0⁺.
2875.29[d] *18*	9⁻		C	Jπ: ΔJ=2, E2 γ to 7⁻; ΔJ=1, M1+E2 γ to 8⁻.
2957.34 *13*			A	Jπ: γ to 2⁺.
2982.67 *23*			A	Jπ: γ to 2⁺.
2988.08 *11*	(3⁺,4⁺)		A	Jπ: γ′s to 2⁺ and 4⁺; and possibly to (5⁺).
3070.34 *13*			A	Jπ: γ to 4⁺.
3083.35[f] *24*	(9⁻)		C	Jπ: ΔJ=1, (M1+E2) γ to 8⁻.
3145.9 *3*			A	Jπ: γ to 2⁺.
3157.81[&] *21*	10⁺	0.83 ps *21*	C	Jπ: ΔJ=2, E2 γ to 8⁺.
3172.19[e] *22*	10⁻		C	Jπ: ΔJ=2, E2 γ to 8⁻; ΔJ=1, M1+E2 γ to 9⁻.
3236.9[j] *4*	(10⁻)		C	Jπ: γ′s to (8⁻) and (9⁻).
3309.5[g] *3*	10⁺		C	Jπ: ΔJ=2, E2 γ to 8⁺; ΔJ=0, (M1+E2) γ to 10⁺.

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Adopted Levels, Gammas (continued)

^{132}Ce Levels (continued)

E(level)[†]	Jπ[‡]	$T_{1/2}$[#]	XREF	Comments
3316.3 *3*			A	Jπ: γ to 2^+.
3317.4 *4*			A	Jπ: γ to 4^+.
3331.7 *4*			A	Jπ: γ to 4^+.
3332.6 *4*			A	Jπ: γ to 2^+.
3378.4 *3*	(2^+,3,4^+)		A	Jπ: γ's to 2^+ and 4^+.
3412.78 *13*			A	Jπ: γ to 3^+.
3451.8[d] *3*	11^-		C	Jπ: ΔJ=2, E2 γ to 9^-; γ to 10^-.
3467.3[b] *7*	(10^+)		C	Jπ: γ to (8^+).
3550.65 *11*			A	Jπ: γ to 4^+.
3670.1[f] *3*	(11^-)		C	Jπ: γ's to (9^-) and 10^-.
3670.76[g] *23*	12^+	7.7 ps *4*	C	Jπ: ΔJ=2, E2 γ's to 10^+.
3681.95 *11*			A	Jπ: γ to 4^+.
3701.97 *23*	(2^+,3,4^+)		A	Jπ: γ's to 2^+ and 4^+.
3721.75 *14*			A	
3728.8[k] *4*	(11^-)		C	Jπ: γ's to (9^-) and (10^-).
3817.4[e] *3*	12^-		C	Jπ: ΔJ=2, E2 γ to 10^-; γ to 11^-.
3825.27 *14*			A	
3863.37 *14*			A	
3863.77 *14*	(2^+,3,4^+)		A	Jπ: γ's to 2^+ and 4^+.
4005.1[a] *4*	12^+		C	Jπ: ΔJ=2, E2 γ to 10^+.
4187.2[d] *4*	13^-		C	Jπ: ΔJ=2, E2 γ to 11^-; ΔJ=1, (M1+E2) γ to 12^-.
4241.16[g] *25*	14^+	1.73 ps *7*	C	Jπ: ΔJ=2, E2 γ to 12^+.
4257.9[j] *5*	(12^-)		C	Jπ: γ's to (10^-) and (11^-).
4258.4[b] *9*	(12^+)		C	Jπ: γ to (10^+).
4270.58 *14*			A	
4271.1 *4*			A	
4348.8 *4*			A	
4352.9 *4*			A	
4390.3 *5*			A	Jπ: γ to 4^+.
4406.1[f] *4*	(13^-)		C	Jπ: ΔJ=2, (E2) γ to 11^-; γ to 12^-.
4473.9 *4*			A	
4605.2[e] *4*	14^-		C	Jπ: ΔJ=2, E2 γ to 12^-; γ to 13^-.
4740.6[a] *5*	14^+		C	Jπ: ΔJ=2, E2 γ to 12^+.
4743.5[k] *5*	(13^-)		C	Jπ: γ's to (11^-) and (12^-).
4940.4[g] *3*	16^+	0.43 ps *4*	C	Jπ: ΔJ=2, E2 γ to 14^+.
5003.0[i] *4*	(13^-)		C	
5042.4[d] *5*	15^-		C	Jπ: ΔJ=2, E2 γ to 13^-.
5104.0[b] *10*	(14^+)		C	
5117.7[h] *6*	(14^-)		C	Jπ: ΔJ=1, (M1+E2) γ to (13^-).
5246.0[f] *5*	(15^-)		C	
5315.2[i] *7*	(15^-)		C	Jπ: ΔJ=1, M1+E2 γ to (14^-).
5325.5[j] *5*	(14^-)		C	
5493.1[e] *5*	16^-		C	Jπ: ΔJ=2, E2 γ to 14^-.
5593.8[a] *7*	(16^+)		C	
5597.2[h] *8*	(16^-)		C	Jπ: ΔJ=1, (M1+E2) γ to (15^-).
5638.2[m] *5*	(15^-)		C	
5763.9[g] *3*	18^+	0.326 ps *21*	C	Jπ: ΔJ=2, E2 γ to 16^+.
5887.9[l] *6*	(16^-)		C	Jπ: ΔJ=1 γ to (15^-).
5948.9[i] *8*	(17^-)		C	Jπ: ΔJ=1, (M1+E2) γ to (16^-).
5963.3[d] *6*	17^-		C	Jπ: ΔJ=2, E2 γ to 15^-.

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Adopted Levels, Gammas (continued)

^{132}Ce Levels (continued)

E(level)[†]	Jπ[‡]	$T_{1/2}$[#]	XREF	Comments
6149.1[f] 7	(17⁻)		C	
6191.7[m] 6	(17⁻)		C	Jπ: ΔJ=1 γ to (16⁻).
6361.2[h] 9	(18⁻)		C	Jπ: ΔJ=1 M1+E2 γ to (17⁻).
6439.5[e] 6	18⁻		C	Jπ: ΔJ=2, E2 γ to 16⁻.
6544.7[l] 6	(18⁻)		C	Jπ: ΔJ=1, M1+E2 γ to (17⁻).
6560.1[a] 9	(18⁺)		C	
6702.8[g] 5	20⁺	<0.7 ps	C	Jπ: ΔJ=2, E2 γ to 18⁺. $T_{1/2}$: effective half-life; not corrected for side feeding.
6826.2[i] 9	(19⁻)		C	
6884.2[d] 7	19⁻		C	Jπ: ΔJ=2, E2 γ to 17⁻.
6943.7[m] 6	(19⁻)		C	Jπ: ΔJ=1 γ to (18⁻).
7127.0[f] 9	(19⁻)		C	
7159.9 9	(19⁻)		C	
7337.7[h] 9	(20⁻)		C	
7367.0[l] 7	(20⁻)		C	
7432.5[e] 7	20⁻		C	Jπ: ΔJ=2, E2 γ to 18⁻.
7630.7[a] 10	(20⁺)		C	
7737.1[g] 6	22⁺		C	Jπ: ΔJ=2, E2 γ to 20⁺.
7821.6[d] 8	21⁻		C	Jπ: ΔJ=2, E2 γ to 19⁻.
7824.3[m] 7	(21⁻)		C	
7859.7 8	(21⁻)		C	
7892.0[i] 9	(21⁻)		C	
8344.3 10			C	
8399.6 9	(22⁻)		C	
8454.5[e] 9	(22⁻)		C	
8484.3[h] 10	(22⁻)		C	
8796.7[a] 11	(22⁺)		C	
8838.2[d] 10	23⁻		C	Jπ: ΔJ=2, E2 γ to 21⁻.
8853.5[g] 6	24⁺		C	Jπ: ΔJ=2, E2 γ to 22⁺.
8896.6 10	(23⁻)		C	
9110.8[i] 10	(23⁻)		C	
9400.0 10	(24⁻)		C	
9543.9[e] 10	(24⁻)		C	
9766.7[h] 10	(24⁻)		C	
9899.4[d] 11	(25⁻)		C	
10044.3[g] 7	26⁺		C	Jπ: ΔJ=2, E2 γ to 24⁺.
10457.0[i] 11	(25⁻)		C	
10991.0[d] 12	(27⁻)		C	
11286.9[g] 9	(28⁺)		C	Jπ: ΔJ=2 γ to 26⁺.
11391.2 12	(28⁺)		C	
12529.5[g] 10	(30⁺)		C	Jπ: ΔJ=2 γ to (28⁺).
12827.9 13	(30⁺)		C	
13838.5[g] 11	(32⁺)		C	Jπ: ΔJ=2 γ to (30⁺).
15216.2[g] 12	(34⁺)		C	
16657.8[g] 13	(36⁺)		C	
18186.4[g] 14	(38⁺)		C	
19790.2[g] 15	(40⁺)		C	
x[n]			C	Additional information 2.
1013.0+x[n] 10			C	
2107.0+x[n] 15			C	

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Adopted Levels, Gammas (continued)

^{132}Ce Levels (continued)

E(level)†	Jπ‡	$T_{1/2}$#	XREF	Comments
3308.0+x[n] *18*			C	
4616.0+x[n] *20*			C	
6027.0+x[n] *23*			C	
7551.0+x[n] *25*			C	
9170+x[n] *3*			C	
10886+x[n] *3*			C	
12700+x[n] *3*			C	
y[@o]	J≈(20$^+$)		D	Jπ: from 2005Pa30. Other: ≈(18) from 1987Ki02 for level fed by 809γ. E(level): y>4950 (1987Ki02).
770.80+y[@o] *10*	J+2		D	Jπ: decay of this level predominantly feeds yrast 18$^+$ state in normal deformed band.
1580.10+y[o] *15*	J+4	59 fs *20*	D	$T_{1/2}$: apparent $T_{1/2}$=301 fs *35* (1987Ki02).
2445.81+y[o] *18*	J+6	62 fs *14*	D	$T_{1/2}$: apparent $T_{1/2}$=193 fs *9* (1987Ki02).
3375.41+y[o] *20*	J+8	28 fs *12*	D	$T_{1/2}$: apparent $T_{1/2}$=118 fs *11* (1987Ki02).
4371.31+y[o] *23*	J+10	<17 fs	D	$T_{1/2}$: apparent $T_{1/2}$=87 fs *11* (1987Ki02).
5433.02+y[o] *25*	J+12	<21 fs	D	$T_{1/2}$: apparent $T_{1/2}$=75 fs *6* (1987Ki02).
6561.8+y[o] *3*	J+14	14 fs *7*	D	$T_{1/2}$: apparent $T_{1/2}$=61 fs *5* (1987Ki02).
7758.2+y[o] *3*	J+16	10 fs *8*	D	$T_{1/2}$: apparent $T_{1/2}$=43 fs *4* (1987Ki02).
9023.8+y[o] *3*	J+18	<14 fs	D	$T_{1/2}$: apparent $T_{1/2}$=35 fs *4* (1987Ki02).
10360.6+y[o] *4*	J+20	<7 fs	D	$T_{1/2}$: apparent $T_{1/2}$=26 fs *4* (1987Ki02).
11771.4+y[o] *4*	J+22	<10 fs	D	$T_{1/2}$: apparent $T_{1/2}$=26 fs *4* (1987Ki02).
13259.5+y[o] *4*	J+24	<10 fs	D	$T_{1/2}$: apparent $T_{1/2}$=22 fs *8* (1987Ki02).
14828.9+y[o] *4*	J+26	<24 fs	D	$T_{1/2}$: apparent $T_{1/2}$=22 fs *8* (1987Ki02).
16483.8+y[o] *5*	J+28	<7 fs	D	$T_{1/2}$: apparent $T_{1/2}$<11 fs (1987Ki02).
18227.7+y[o] *5*	J+30		D	$T_{1/2}$: apparent $T_{1/2}$<17 fs (1987Ki02).
20063.8+y[o] *6*	J+32		D	
21994.8+y[o] *6*	J+34		D	
24022.0+y[o] *7*	J+36		D	
26144.8+y[o] *8*	J+38		D	
28360.6+y[o] *9*	J+40		D	
30663.6+y[o] *14*	J+42		D	
33081.6+y[o] *17*	J+44		D	
35585.6+y[o] *20*	J+46		D	
38187.7+y[o] *22*	J+48		D	
z[p]	J1≈(19$^-$)		D	Jπ: from 2005Pa30, based on 'identical' band relationships.
724.40+z[p] *10*	J1+2		D	
1518.70+z[p] *15*	J1+4		D	
2384.59+z[p] *18*	J1+6		D	
3313.60+z[p] *20*	J1+8		D	
4314.39+z[p] *23*	J1+10		D	
5382.89+z[p] *25*	J1+12		D	
6521.3+z[p] *3*	J1+14		D	
7732.6+z[p] *3*	J1+16		D	
9021.1+z[p] *3*	J1+18		D	
10385.6+z[p] *4*	J1+20		D	
11839.5+z[p] *4*	J1+22		D	
13377.8+z[p] *5*	J1+24		D	
14999.3+z[p] *5*	J1+26		D	
16729.5+z[p] *6*	J1+28		D	
18545.6+z[p] *7*	J1+30		D	

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Adopted Levels, Gammas (continued)

^{132}Ce Levels (continued)

E(level)[†]	J$^{\pi}$[‡]	XREF	Comments
20452.2+z[p] *8*	J1+32	D	
22451.1+z[p] *9*	J1+34	D	
24536.7+z[p] *11*	J1+36	D	
u[q]	J2≈(24^{-})	D	J$^{\pi}$: from 2005Pa30, based on 'identical' band relationships.
890.19+u[q] *10*	J2+2	D	
1839.79+u[q] *15*	J2+4	D	
2857.29+u[q] *18*	J2+6	D	
3945.70+u[q] *20*	J2+8	D	
5107.09+u[q] *23*	J2+10	D	
6335.28+u[q] *25*	J2+12	D	
7640.6+u[q] *3*	J2+14	D	
9024.1+u[q] *3*	J2+16	D	
10489.5+u[q] *3*	J2+18	D	
12030.6+u[q] *4*	J2+20	D	
13642.1+u[q] *5*	J2+22	D	
15307.5+u[q] *5*	J2+24	D	
17043.1+u[q] *6*	J2+26	D	
18858.3+u[q] *7*	J2+28	D	
20743.4+u[q] *8*	J2+30	D	
22697.1+u[q] *9*	J2+32	D	
24697.8+u[q] *10*	J2+34	D	
26752.0+u[q] *11*	J2+36	D	

[†] From least-squares fit to Eγ's.
[‡] From γγ(θ), γγ(θ)(DCO) and γ(lin pol). For high-spin states (J>6), many assignments are based on band associations; and general assumption of ascending spins with excitation energy which is supported by the population of yrast states in such reactions.
[#] For excited states, values are from recoil-distance method in ^{100}Mo(^{36}S,4nγ).
[@] Decays to four normal-deformed bands (1988NoZY).
[&] Band(A): The g.s. band.
[a] Band(a): ef band.
[b] Band(B): γ band.
[c] Band(C): Possible β band.
[d] Band(D): AE/BE/CE/DE band. AEFG/BEFG or AEef/BEef band at the top. Q(transition) 3.0 at low spins (2001Pa25).
[e] Band(E): AE/BE/CE/DE band. AEFG/BEFG or AEef/BEef band at the top. Q(transition) 3.0 at low spins (2001Pa25).
[f] Band(F): AE/BE/CE/DE band.
[g] Band(G): EF band, EFef at the top. Q(transition) 3.0 at low spins, 3.5-4.0 at high spins (2001Pa25).
[h] Band(H): AFef band.
[i] Band(h): AEef band.
[j] Band(I): ae, isomer band.
[k] Band(i): af, isomer band.
[l] Band(J): aeEF band.
[m] Band(j): afEF band.
[n] Band(K): Weak band: population intensity is 0.1% of the reaction channel leading to ^{132}Ce. The assignment is based on transitions of this band seen in coincidence with those amongst low-lying states of ^{132}Ce. The energy spacing of γ rays in this band suggests that it is not an SD band.
[o] Band(L): SD-1 band (2005Pa30,1996Se04,1995Sa21,1987Ki02,1985No02). Q(intrinsic)=7.4 *2*: weighted average of 7.4 *3* (1996Cl03), 7.4 *9* (1995Ha28), 7.5 *6* (recalculated 8.8 *8* by 1990Re12 from data of 1987Ki02), 7.5 *7* (quoted by 1992PaZW). Other: 7.1 (1994WaZV). β_2(from Q)=0.41 *4* (1995Ha28), 0.39 *2* (1994WaZV). Percent population=1.4 to 3.5 (1998Wi13) as

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

^{132}Ce Levels (continued)

bombarding energy increases from 135 to 150 MeV in ^{100}Mo(^{36}S,4nγ). Remains constant at about 3.5% between 150 and 175 MeV. Percent population=5 in ^{100}Mo(^{36}S,4nγ) E=150 MeV (1987Ki02); 5.5 in ^{100}Mo(^{36}S,4nγ) E=155 MeV (1995Sa21), ≈6 (2005Pa30). 1996Cl03 point that in the decay of this band, it is seen that all transitions in the BAND(F) up to and including the 822 keV ($18^+ \rightarrow 16^+$) γ and no evidence for the 936 keV ($20^+ \rightarrow 18^+$). Configuration=(($\pi 5^4$)⊗($\nu 6^2$)) (1995Ha34). There is some evidence of ΔJ=2 staggering in the lower and higher rotational frequency regions, but not in the middle range (1996Se04). Measurements of quasicontinuum spectra by 1998Fa07 suggest that the SD band is fed by a highly deformed quasicontinuum of transitions of quadrupole character. Configuration proposed by 2005Pa30: Lower part of SD-1 band: $\pi[(g_{9/2}^{-2})(d_{5/2}/g_{7/2})^6(h_{11/2}^4)]\nu[(h_{11/2}{}^{-4})(d_{5/2}/g_{7/2})^{-4}(d_{3/2}/s_{1/2})^{-4}\ (h_{9/2}/f_{7/2})^2(i_{13/2}^2)]$. At higher spins different configurations are discussed by 2005Pa30, one such configuration being: starting at $(h_{9/2}/f_{7/2})^2$ and then becoming $(h_{9/2}/f_{7/2})^3$.

[p] Band(M): SD-2 band (2005Pa30,1995Sa21,1996Cl03). Percent population=1.0 (1995Sa21) in ^{100}Mo(^{36}S,4nγ) E=155 MeV. ≈ 1 (2005Pa30) at E(^{36}S)=160, 165 MeV. Q(intrinsic)=7.3 *4* (1996Cl03) from DSAM data for all the transitions in the band. Probable excitation of a neutron from 1/2[411] (α=+1/2) or 7/2[523] orbital to 1/2[530] or 3/2[651] α=+1/2 orbital (1995Sa21, 1996Cl03).

[q] Band(N): SD-3 band (2005Pa30,1995Sa21,1996Cl03). Percent population=1.0 (1995Sa21) in ^{100}Mo(^{36}S,4nγ) E=155 MeV; ≈ 1 (2005Pa30) at E(^{36}S)=160, 165 MeV. Q(intrinsic)=7.6 *4* (1996Cl03) from DSAM data for all the transitions in the band. Probable excitation of a neutron from 1/2[411] (α=+1/2) or 7/2[523] orbital to 1/2[530] or 3/2[651] α=+1/2 orbital (1995Sa21, 1996Cl03).

Adopted Levels, Gammas (continued)

γ(^{132}Ce)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[‡]	δ[#]	α[a]	Comments
325.34	2+	325.3 *1*	100	0.0	0+	E2		0.0380	α(K)=0.0307 *10*; α(L)=0.00570 *17*; α(M)=0.00121 *4*; α(N+..)=0.00032 *1* B(E2)(W.u.)=93 *7*
822.17	2+	496.77 *11*	100 *10*	325.34	2+	E2+M1	+9 *+5−3*	0.0110	α(K)=0.0092 *1*; α(L)=0.00145 *1*; α(M)=0.00030
		822.20 *13*	70 *7*	0.0	0+				
858.82	4+	533.17 *13*	100	325.34	2+	E2		0.0092	α(K)=0.00760 *23*; α(L)=0.00117 *4* B(E2)(W.u.)=103 *23*
1158.40	0+	336.3 *1*	100 *20*	822.17	2+				
		833.1 *1*	52 *10*	325.34	2+				
1199.45	3+	340.6 *3*	5.5 *11*	858.82	4+	E2+M1	+2.60[@] *+27−13*	0.0341	α(K)=0.0279 *2*; α(L)=0.00485; α(M)=0.00103; α(N+..)=0.00027
		377.3 *1*	28 *6*	822.17	2+	E2+M1	+13.2[@] *14*	0.0242	α(K)=0.0198; α(L)=0.00345; α(M)=0.00073; α(N+..)=0.00019 δ: −0.216 *+44−13* (1993LuZX) also possible, but less likely from systematics.
		874.1 *1*	100 *10*	325.34	2+	E2+M1	+4.8 *6*	0.00279 *2*	α(K)=0.00236 *2*; α(L)=0.00032 δ: other: −0.31 *5* (1993LuZX).
1384.06	4+	525.0 *2*	55 *6*	858.82	4+	M1+E2	+0.84 *+29−18*	0.0121 *7*	α(K)=0.0103 *6*; α(L)=0.00142 *5* δ: others: +0.93 *+45−15* (1993LuZX), ∞ (1998Ga43).
		561.89 *11*	100 *10*	822.17	2+				
		1058.7 *1*	10.0 *20*	325.34	2+				
1497.08	2+	297.7 *1*	14 *3*	1199.45	3+	M1+E2	+0.97 *+60−17*	0.055 *2*	α(K)=0.046 *3*; α(L)=0.0073 *2*; α(M)=0.00153 *6*; α(N+..)=0.00041 *1* δ: or +0.62 *+18−29*.
		338.7 *1*	46 *9*	1158.40	0+				
		674.9 *1*	100 *20*	822.17	2+	M1+E2	+0.41 *7*	0.00719 *11*	α(K)=0.00612 *10*; α(L)=0.00080 *1*
		1171.6 *1*	35 *7*	325.34	2+	E2+M1	−1.4 *2*	0.00166 *5*	α(K)=0.00142 *4*; α(L)=0.00018 *1*
		1497.2 *3*	3.7 *11*	0.0	0+				
1542.58	6+	683.8 *2*	100	858.82	4+	E2		0.00485	α(K)=0.00407 *13*; α(L)=0.00059 *2* B(E2)(W.u.)=140 *80*
1655.93		271.9 *3*	9.4 *19*	1384.06	4+				
		456.5 *1*	100 *20*	1199.45	3+				
		797.1 *1*	27 *5*	858.82	4+				
1714.15		1388.8 *1*	100	325.34	2+				
1734.65	2+	237.6 *3*	8.6 *17*	1497.08	2+	E2+M1	−8 *3*	0.104	α(K)=0.0813 *3*; α(L)=0.0179 *1*; α(M)=0.00384 *3*; α(N+..)=0.00101 *1*
		535.2 *1*	17 *3*	1199.45	3+				
		576.3 *3*	7.2 *14*	1158.40	0+				
		875.8 *3*	2.6 *17*	858.82	4+				
		912.5 *1*	100 *20*	822.17	2+	M1+E2	−0.28 *7*	0.00360 *5*	α(K)=0.00307 *4*; α(L)=0.00040 *1*
		1409.3 *1*	70 *14*	325.34	2+	M1(+E2)	−0.08 *6*	0.00135 *1*	α(K)=0.00116; α(L)=0.00015

$^{132}_{58}Ce_{74}$-8

Adopted Levels, Gammas (continued)

γ(^{132}Ce) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[‡]	δ[#]	α[a]	Comments
1808.38	(2$^+$,3,4$^+$)	949.5 *1*	48 *9*	858.82	4$^+$				
		986.4 *3*	2.9 *24*	822.17	2$^+$				
		1483.0 *1*	100 *20*	325.34	2$^+$				
1814.69	(5$^+$)	430.9 *2*	23 *14*	1384.06	4$^+$				I_γ: unweighted average from ^{132}Pr ε and IT decay.
		615.1 *3*	100 *9*	1199.45	3$^+$				
		955.6 *3*	26 *5*	858.82	4$^+$				
1922.75	(2$^+$,3,4$^+$)	1063.9 *1*	46 *9*	858.82	4$^+$				
		1100.6 *1*	11.8 *24*	822.17	2$^+$				
		1597.4 *1*	100 *20*	325.34	2$^+$				
1931.97	(4$^+$)	434.9 *1*	100 *20*	1497.08	2$^+$				
		548.0 *1*	90 *18*	1384.06	4$^+$	(M1+E2)	≤1.8	0.0110 *16*	α(K)=0.0093 *14*; α(L)=0.00128 *13*
		732.5 *1*	47 *9*	1199.45	3$^+$				
		1073.1 *1*	90 *18*	858.82	4$^+$	(M1+E2)	≤1.5	0.0023 *3*	α(K)=0.00193 *24*; α(L)=0.00025 *3*
		1109.8 *1*	17 *3*	822.17	2$^+$				
		1606.5 *1*	28 *6*	325.34	2$^+$				
1950.66	(2$^+$,3,4$^+$)	216.0 *1*	13 *3*	1734.65	2$^+$				
		294.8 *1*	10.0 *20*	1655.93					
		453.6 *1*	31 *6*	1497.08	2$^+$				
		566.5 *3*	6.0 *12*	1384.06	4$^+$				
		751.2 *1*	100 *20*	1199.45	3$^+$				
		1091.8 *1*	44 *9*	858.82	4$^+$				
		1128.6 *1*	92 *18*	822.17	2$^+$				
		1625.2 *1*	69 *14*	325.34	2$^+$				
1996.46		1671.1 *1*	100	325.34	2$^+$				
2023.4	(6$^+$)	480.8[c]		1542.58	6$^+$	(M1+E2)	+2.9 *+81−13*	0.0126 *10*	α(K)=0.0106 *9*; α(L)=0.00164 *7*; α(M)=0.00034 *1* E_γ: from level-energy difference.
		639.4 *3*	100	1384.06	4$^+$				
2038.84	(2$^+$ to 5$^+$)	383.0 *1*	82 *16*	1655.93					
		654.9 *1*	38 *8*	1384.06	4$^+$				
		839.4 *1*	79 *16*	1199.45	3$^+$				
		1179.9 *1*	100 *20*	858.82	4$^+$				
2048.19	5$^-$	505.3 *3*	42 *4*	1542.58	6$^+$	D			δ(Q/D)=+0.002 *33*.

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Adopted Levels, Gammas (continued)

γ(^{132}Ce) (continued)

E_i(level)	J_i^π	E_γ †	I_γ †	E_f	J_f^π	Mult.‡	α[a]	Comments
2048.19	5⁻	1189.3 *1*	100 *10*	858.82	4⁺	E1+M2	0.00063 *1*	α(K)=0.00054 *1*
2049.82?		1191.0 *1*	100	858.82	4⁺			
2096.83	(2⁺,3,4⁺)	441.0 *3*	9 *2*	1655.93				
		599.6 *3*	7 *1*	1497.08	2⁺			
		712.7 *1*	15 *3*	1384.06	4⁺			
		897.5 *1*	45 *9*	1199.45	3⁺			
		1238.0 *1*	14 *3*	858.82	4⁺			
		1274.7 *1*	100 *20*	822.17	2⁺			
2138.4	(4⁻)	1279.7 *3*	100	858.82	4⁺			E_γ: from 1997Pa15; 1281 in 1998Ga43.
2145.66		1820.3 *1*	100	325.34	2⁺			
2169.31		360.9 *1*	17 *3*	1808.38	(2⁺,3,4⁺)			
		1844.0 *1*	100 *20*	325.34	2⁺			
2189.23		1330.4 *1*	100	858.82	4⁺			
2295.66		1970.3 *1*	100	325.34	2⁺			
2329.58	8⁺	787.1 *1*	100	1542.58	6⁺	E2	0.00347	α(K)=0.00293 *9*; α(L)=0.00041 *1* B(E2)(W.u.)=68 *14*
2330.33		1471.5 *1*	100	858.82	4⁺			
2341.15	(8⁻)	11.6	0.17 *5*	2329.58	8⁺	[E1]	16	B(E1)(W.u.)=2.2×10^{-11} *9*
		526.8 *3*	45 *4*	1814.69	(5⁺)	[E3]	0.0254	α(K)=0.0197 *6*; α(L)=0.00429 *13* B(E3)(W.u.)=0.0033 *4* Additional information 3.
		798.5 *2*	100 *10*	1542.58	6⁺	[M2]	0.0135	α(K)=0.0114 *4*; α(L)=0.00157 *5* B(M2)(W.u.)=2.6×10^{-7} *4*
2364.93		708.9 *1*	100 *20*	1655.93				
		980.7 *1*	84 *17*	1384.06	4⁺			
		1506.4 *1*	33 *7*	858.82	4⁺			
2379.26		2053.9 *1*	100	325.34	2⁺			
2379.74		723.8 *1*	100	1655.93				
2431.87	7⁻	383.6 *1*	100 *10*	2048.19	5⁻	E2	0.0230	α(K)=0.0188 *6*; α(L)=0.00326 *10*; α(M)=0.00069 *2*; α(N+..)=0.00018 *1*
		890.0 *3*	68 *7*	1542.58	6⁺	E1	0.00107	α(K)=0.00091 *3*; α(L)=0.00011 δ(M2/E1)=−0.005 *19*.
2450.73		1591.9 *1*	100	858.82	4⁺			
2464.56		2139.2 *1*	100	325.34	2⁺			
2469.35	6⁻	331.1 *5*	25.0 *25*	2138.4	(4⁻)	Q		
		420.8 *3*	100 *10*	2048.19	5⁻			
		927.1 *3*	90 *9*	1542.58	6⁺	E1	0.00098	α(K)=0.00084 *3*; α(L)=0.00011
2482.98	(2⁺,3,4⁺)	1283.5 *1*	29 *6*	1199.45	3⁺			
		1624.1 *3*		858.82	4⁺			
		1660.8 *1*	100 *20*	822.17	2⁺			
		2157.6 *1*	43 *9*	325.34	2⁺			
2508.70	(2⁺,3,4⁺)	774.1 *3*	3.8 *8*	1734.65	2⁺			

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Adopted Levels, Gammas (continued)

γ(^{132}Ce) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[‡]	δ[#]	α[a]	Comments
2508.70	(2$^+$,3,4$^+$)	852.8 *3*	9.6 *19*	1655.93					
		1011.5 *3*	3.4 *7*	1497.08	2$^+$				
		1124.6 *3*	3.1 *6*	1384.06	4$^+$				
		1309.2 *1*	100 *20*	1199.45	3$^+$				
		1649.9 *1*	21 *4*	858.82	4$^+$				
		1686.5 *1*	39 *8*	822.17	2$^+$				
		2183.4 *1*	18 *4*	325.34	2$^+$				
2554.10		631.7 *3*	4.2 *8*	1922.75	(2$^+$,3,4$^+$)				
		1354.7 *1*	11.3 *23*	1199.45	3$^+$				
		1731.7 *1*	48 *10*	822.17	2$^+$				
		2228.9 *1*	100 *20*	325.34	2$^+$				
2562.55		2237.2 *1*	100	325.34	2$^+$				
2577.81		1378.3 *1*	78 *16*	1199.45	3$^+$				
		2252.5 *1*	100 *20*	325.34	2$^+$				
2606.18		1783.9 *1*	61 *12*	822.17	2$^+$				
		2280.9 *1*	100 *20*	325.34	2$^+$				
2624.0	7$^-$	1080.6 *3*	100	1542.58	6$^+$	E1		0.00074	α(K)=0.00063 *2*
2644.66		2319.3 *1*	100	325.34	2$^+$				
2650.47		1451.0 *1*	100	1199.45	3$^+$				
2714.22	8$^-$	245.0 *3*	89 *9*	2469.35	6$^-$	E2		0.094	α(K)=0.0737 *23*; α(L)=0.0160 *5*; α(M)=0.00343 *11*; α(N+..)=0.00091 *3*
		282.7 *3*	100 *10*	2431.87	7$^-$	D+Q			
2719.47		1520.0 *1*	100	1199.45	3$^+$				
2728.5	(8$^+$)	705.0 *3*	100	2023.4	(6$^+$)				
2740.65	(2$^+$,3,4$^+$)	643.9 *1*	30 *6*	2096.83	(2$^+$,3,4$^+$)				
		808.6 *1*	39 *8*	1931.97	(4$^+$)				
		1084.6 *1*	100 *20*	1655.93					
		1356.5 *1*	98 *20*	1384.06	4$^+$				
		1541.3 *1*	85 *17*	1199.45	3$^+$				
		1881.8 *1*	40 *8*	858.82	4$^+$				
		1918.5 *1*	40 *8*	822.17	2$^+$				
2758.56		2433.2 *1*	100	325.34	2$^+$				
2761.83		1903.0 *1*	100	858.82	4$^+$				
2764.6	(9$^-$)	423.4 *3*	100	2341.15	(8$^-$)				
2825.83		1967.0 *1*	100	858.82	4$^+$				
2835.84	(2$^+$,3,4$^+$)	1977.0 *1*	40 *8*	858.82	4$^+$				
		2510.4 *3*	100 *20*	325.34	2$^+$				
2857.55		1473.5 *1*	100	1384.06	4$^+$				
2864.13		2005.3 *1*	100	858.82	4$^+$				
2866.93	(1,2$^+$)	1708.5 *1*	100	1158.40	0$^+$				
2875.29	9$^-$	159.9 *5*	0.71 *7*	2714.22	8$^-$	M1+E2	+0.078 *20*	0.320	α(K)=0.273; α(L)=0.0373 *2*; α(M)=0.00776 *4*; α(N+..)=0.00212 *1*

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Adopted Levels, Gammas (continued)

γ(^{132}Ce) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[‡]	δ[#]	α[a]	Comments
2875.29	9⁻	443.4 *1*	100 *10*	2431.87	7⁻	E2		0.0151	α(K)=0.0125 *4*; α(L)=0.00204 *7*; α(M)=0.00043 *1*; α(N+..)=0.00012
2957.34		1222.7 *1*	29 *6*	1734.65	2⁺				
		2632.1 *3*	100 *20*	325.34	2⁺				
2982.67		1247.9 *3*	21 *7*	1734.65	2⁺				
		2657.4 *3*	100 *20*	325.34	2⁺				
2988.08	(3⁺,4⁺)	1037.4 *3*	8.3 *17*	1950.66	(2⁺,3,4⁺)				
		1173.3 *3*		1814.69	(5⁺)				
		1253.3 *3*	9.2 *18*	1734.65	2⁺				
		2129.2 *1*	100 *20*	858.82	4⁺				
		2165.9 *1*	21 *4*	822.17	2⁺				
		2662.9 *3*	66 *13*	325.34	2⁺				
3070.34		2211.5 *1*	100	858.82	4⁺				
3083.35	(9⁻)	369.3 *5*	90 *9*	2714.22	8⁻	(M1+E2)		0.030 *4*	α(K)=0.025 *4*; α(L)=0.00377 *8*; α(M)=0.00079 *1*; α(N+..)=0.00021 *1*
		458.5 *3*	100 *10*	2624.0	7⁻				
		651.5 *3*	70 *7*	2431.87	7⁻				
		755.3 *5*	10 *1*	2329.58	8⁺				E_γ: poor fit; level-energy difference=753.8.
3145.9		2820.5 *3*	100	325.34	2⁺				
3157.81	10⁺	828.2 *1*	100	2329.58	8⁺	E2		0.00309	α(K)=0.00261 *8*; α(L)=0.00036 *1* B(E2)(W.u.)=44 *11*
3172.19	10⁻	296.5 *5*	62 *6*	2875.29	9⁻	M1+E2		0.055 *5*	α(K)=0.046 *6*; α(L)=0.0074 *6*; α(M)=0.00156 *14*; α(N+..)=0.00042 *3*
		458.0 *1*	100 *10*	2714.22	8⁻	E2		0.0138	α(K)=0.0114 *4*; α(L)=0.00185 *6*; α(M)=0.00039 *1*; α(N+..)=0.00010
3236.9	(10⁻)	472.6 *3*	100 *10*	2764.6	(9⁻)				
		896.2 *5*	18.2 *18*	2341.15	(8⁻)				
3309.5	10⁺	151.4 *3*	58 *6*	3157.81	10⁺	(M1+E2)	−0.43 *5*	0.389	α(K)=0.321 *1*; α(L)=0.053 *2*; α(M)=0.0113 *5*; α(N+..)=0.00304 *12*
		980.2 *3*	100 *10*	2329.58	8⁺	E2		0.00213	α(K)=0.00180 *6*; α(L)=0.00024 *1*
3316.3		2990.9 *3*	100	325.34	2⁺				
3317.4		2458.6 *3*	100	858.82	4⁺				
3331.7		2472.9 *3*	100	858.82	4⁺				
3332.6		2510.4 *3*	100	822.17	2⁺				
3378.4	(2⁺,3,4⁺)	2519.5 *3*	100 *20*	858.82	4⁺				
		3053.1 *5*	47 *9*	325.34	2⁺				
3412.78		2213.3 *1*	100 *20*	1199.45	3⁺				
3451.8	11⁻	279.5 *3*	25.5 *26*	3172.19	10⁻				
		576.1 *3*	100 *10*	2875.29	9⁻	E2		0.00747	α(K)=0.00622 *19*; α(L)=0.00093 *3*
3467.3	(10⁺)	738.9 *5*	100	2728.5	(8⁺)				
3550.65		1894.7 *1*	82 *16*	1655.93					
		2166.5 *1*	100 *20*	1384.06	4⁺				

$^{132}_{58}Ce_{74}$-12

Adopted Levels, Gammas (continued)

γ(^{132}Ce) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[‡]	α[a]	Comments
3670.1	(11$^-$)	498.3 *3*	100 *10*	3172.19	10$^-$			
		586.6 *3*	81 *8*	3083.35	(9$^-$)			
3670.76	12$^+$	361.3 *3*	38 *4*	3309.5	10$^+$	E2	0.0275	α(K)=0.0225 *7*; α(L)=0.00398 *12*; α(M)=0.00085 *3*; α(N+..)=0.00023 *1* B(E2)(W.u.)=81 *12*
		513.1 *1*	100 *10*	3157.81	10$^+$	E2	0.0101	α(K)=0.0084 *3*; α(L)=0.00131 *4* B(E2)(W.u.)=37 *5*
3681.95		2025.9 *1*	86 *17*	1655.93				
		2297.9 *1*	100 *20*	1384.06	4$^+$			
3701.97	(2$^+$,3,4$^+$)	2843.2 *3*	25 *5*	858.82	4$^+$			
		2879.7 *3*	100 *20*	822.17	2$^+$			
3721.75		2065.8 *1*	100	1655.93				
3728.8	(11$^-$)	492.4 *3*	100 *10*	3236.9	(10$^-$)			
		963.6 *3*	65 *7*	2764.6	(9$^-$)			
3817.4	12$^-$	365.2 *3*	10 *1*	3451.8	11$^-$			
		645.5 *3*	100 *10*	3172.19	10$^-$	E2	0.00559	α(K)=0.00468 *14*; α(L)=0.00068 *2*
3825.27		1893.3 *1*	100	1931.97	(4$^+$)			
3863.37		1931.4 *1*	100	1931.97	(4$^+$)			
3863.77	(2$^+$,3,4$^+$)	2129.1 *1*	100 *20*	1734.65	2$^+$			
		3004.9 *5*	26 *5*	858.82	4$^+$			
4005.1	12$^+$	846.0 *3*	100 *10*	3157.81	10$^+$	E2	0.00294	α(K)=0.00249 *8*; α(L)=0.00034 *1* E_γ: poor fit; level-energy difference=847.3.
4187.2	13$^-$	369.7 *5*	3.8 *4*	3817.4	12$^-$	(M1+E2)	0.030 *4*	α(K)=0.025 *4*; α(L)=0.00376 *8*; α(M)=0.00079 *1*; α(N+..)=0.00021 *1*
		735.4 *3*	100 *10*	3451.8	11$^-$	E2	0.00407	α(K)=0.00343 *11*; α(L)=0.00048 *2*
4241.16	14$^+$	570.4 *1*	100	3670.76	12$^+$	E2	0.00766	α(K)=0.00638 *20*; α(L)=0.00096 *3* B(E2)(W.u.)=136 *6*
4257.9	(12$^-$)	529.3 *5*	71 *7*	3728.8	(11$^-$)			
		1021.1 *5*	100 *10*	3236.9	(10$^-$)			
4258.4	(12$^+$)	791.0 *5*	100	3467.3	(10$^+$)			
4270.58		2338.6 *1*	100	1931.97	(4$^+$)			
4271.1		2615.1 *3*	100	1655.93				
4348.8		2416.8 *3*	100	1931.97	(4$^+$)			
4352.9		2696.9 *3*	100	1655.93				
4390.3		3006.2 *5*	100	1384.06	4$^+$			
4406.1	(13$^-$)	588.6 *3*	100 *10*	3817.4	12$^-$			
		736.3 *5*	75 *8*	3670.1	(11$^-$)	E2	0.00406	α(K)=0.00342 *11*; α(L)=0.00048 *2*
4473.9		2817.9 *3*	100	1655.93				
4605.2	14$^-$	418.1 *5*	2.9 *3*	4187.2	13$^-$			
		787.8 *3*	100 *10*	3817.4	12$^-$	E2	0.00346	α(K)=0.00292 *9*; α(L)=0.00041 *1*
4740.6	14$^+$	735.5 *3*	100	4005.1	12$^+$	E2	0.00407	α(K)=0.00343 *11*; α(L)=0.00048 *2*
4743.5	(13$^-$)	486.0 *5*	43 *4*	4257.9	(12$^-$)			
		1014.6 *5*	100 *10*	3728.8	(11$^-$)			

$^{132}_{58}Ce_{74}$-13

Adopted Levels, Gammas (continued)

γ(^{132}Ce) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[‡]	δ[#]	α[a]	Comments
4940.4	16^+	699.2 *1*	100	4241.16	14^+	E2		0.00460	α(K)=0.00386 *12*; α(L)=0.00055 *2* B(E2)(W.u.)=197 *19*
5003.0	(13^-)	996.6 *3*	91 *9*	4005.1	12^+				E_γ: poor fit; level-energy difference=997.9.
		1333.5 *3*	100 *10*	3670.76	12^+				E_γ: poor fit; level-energy difference=1332.2.
5042.4	15^-	855.2 *3*	100	4187.2	13^-	E2		0.00287	α(K)=0.00243 *8*; α(L)=0.00033 *1*
5104.0	(14^+)	845.6 *5*	100	4258.4	(12^+)				
5117.7	(14^-)	114.7 *5*	100	5003.0	(13^-)	(M1+E2)	−0.158 *20*	0.82	α(K)=0.696 *1*; α(L)=0.101 *2*; α(M)=0.0211 *4*; α(N+..)=0.00576 *10*
5246.0	(15^-)	839.9 *3*	100	4406.1	(13^-)				
5315.2	(15^-)	197.5 *3*	100	5117.7	(14^-)	M1+E2	−0.088 *13*	0.179	α(K)=0.153; α(L)=0.0207; α(M)=0.00431 *1*; α(N+..)=0.00118
5325.5	(14^-)	582.1 *5*	50 *5*	4743.5	(13^-)				
		1067.6 *5*	100 *10*	4257.9	(12^-)				
5493.1	16^-	887.9 *3*	100	4605.2	14^-	E2		0.00264	α(K)=0.00223 *7*; α(L)=0.00030 *1*
5593.8	(16^+)	850.3 *5*	100	4743.5	(13^-)				
5597.2	(16^-)	282.0 *3*	100	5315.2	(15^-)	(M1+E2)	−0.042 *9*	0.0686	α(K)=0.0587; α(L)=0.00785; α(M)=0.00163; α(N+..)=0.00044
5638.2	(15^-)	312.8 *5*	100 *10*	5325.5	(14^-)				
		894.8 *5*	100 *10*	4743.5	(13^-)				
		1450.8 *5*	100 *10*	4187.2	13^-				
5763.9	18^+	823.5 *1*	100	4940.4	16^+	E2		0.00313	α(K)=0.00264 *8*; α(L)=0.00037 *1* B(E2)(W.u.)=115 *8*
5887.9	(16^-)	249.7 *3*	100	5638.2	(15^-)	D			
5948.9	(17^-)	351.7 *3*	100	5597.2	(16^-)	(M1+E2)	−0.122 *16*	0.0384	α(K)=0.0329; α(L)=0.00437; α(M)=0.00091; α(N+..)=0.00025
5963.3	17^-	920.9[b] *3*	100	5042.4	15^-	E2		0.00244	α(K)=0.00206 *7*; α(L)=0.00028 *1*
6149.1	(17^-)	903.1 *5*	100	5246.0	(15^-)				
6191.7	(17^-)	303.6 *3*	100 *10*	5887.9	(16^-)	D			
		553.6 *5*	4.2 *4*	5638.2	(15^-)				
6361.2	(18^-)	412.4 *3*	100	5948.9	(17^-)	M1+E2	−0.076 *27*	0.0255	α(K)=0.0219; α(L)=0.00289; α(M)=0.00060; α(N+..)=0.00016
6439.5	18^-	946.4 *3*	100	5493.1	16^-	E2		0.00229	α(K)=0.00194 *6*; α(L)=0.00026 *1*
6544.7	(18^-)	353.0 *3*	100 *10*	6191.7	(17^-)	M1+E2		0.034 *5*	α(K)=0.028 *5*; α(L)=0.00432 *1*; α(M)=0.00091 *1*; α(N+..)=0.00024
		657.0 *5*	4.3 *4*	5887.9	(16^-)				
6560.1	(18^+)	966.3 *5*	100	5593.8	(16^+)				
6702.8	20^+	938.9 *3*	100	5763.9	18^+	E2		0.00233	α(K)=0.00198 *6*; α(L)=0.00027 *1* B(E2)(W.u.)>28
6826.2	(19^-)	465.0 *3*	100 *10*	6361.2	(18^-)				
		877.0 *5*	20 *2*	5948.9	(17^-)				
6884.2	19^-	920.9[b] *3*	100	5963.3	17^-	E2		0.00244	α(K)=0.00206 *7*; α(L)=0.00028 *1*
6943.7	(19^-)	399.1 *3*	100 *10*	6544.7	(18^-)	D			
		751.9 *5*	20 *2*	6191.7	(17^-)				
7127.0	(19^-)	977.9 *5*	100	6149.1	(17^-)				
7159.9	(19^-)	1010.8 *5*	100	6149.1	(17^-)				
7337.7	(20^-)	511.6 *3*	100 *10*	6826.2	(19^-)				
		976.9 *5*	38 *4*	6361.2	(18^-)				

$^{132}_{58}Ce_{74}$-14

Adopted Levels, Gammas (continued)

γ(^{132}Ce) (continued)

E_i(level)	J_i^π	E_γ †	I_γ †	E_f	J_f^π	Mult.‡	α[a]	Comments
7367.0	(20⁻)	423.4 *3*	100 *10*	6943.7	(19⁻)			
		822.1 *5*	5.9 *6*	6544.7	(18⁻)			
7432.5	20⁻	993.0 *3*	100	6439.5	18⁻	E2	0.00207	α(K)=0.00175 *6*; α(L)=0.00024 *1*
7630.7	(20⁺)	1070.6 *5*	100	6560.1	(18⁺)			
7737.1	22⁺	1034.3 *3*	100	6702.8	20⁺	E2	0.00190	α(K)=0.00161 *5*; α(L)=0.00021 *1*
7821.6	21⁻	937.4 *5*	100	6884.2	19⁻	E2	0.00234	α(K)=0.00199 *6*; α(L)=0.00027 *1*
7824.3	(21⁻)	457.4 *3*	100 *10*	7367.0	(20⁻)			
		880.3 *5*	5.6 *6*	6943.7	(19⁻)			
7859.7	(21⁻)	975.5 *5*	100	6884.2	19⁻			
7892.0	(21⁻)	554.8 *3*	100 *10*	7337.7	(20⁻)			
		1065.0 *5*	42 *4*	6826.2	(19⁻)			
8344.3		522.7 *5*	100	7821.6	21⁻			
8399.6	(22⁻)	967.0 *5*	100	7432.5	20⁻			
8454.5	(22⁻)	1021.9 *5*	100	7432.5	20⁻			
8484.3	(22⁻)	592.4 *3*	100 *10*	7892.0	(21⁻)			
		1146.0 *5*	38 *4*	7337.7	(20⁻)			
8796.7	(22⁺)	1166.0 *5*	100	7630.7	(20⁺)			
8838.2	23⁻	1016.6 *5*	100	7821.6	21⁻	E2	0.00197	α(K)=0.00167 *5*; α(L)=0.00022 *1*
8853.5	24⁺	1116.4 *3*	100	7737.1	22⁺	E2	0.00161	α(K)=0.00137 *5*; α(L)=0.00018 *1*
8896.6	(23⁻)	1036.9 *5*	100	7859.7	(21⁻)			
9110.8	(23⁻)	626.1 *5*	100 *10*	8484.3	(22⁻)			
		1219.1 *5*	75 *8*	7892.0	(21⁻)			
9400.0	(24⁻)	1000.4 *5*	100	8399.6	(22⁻)			
9543.9	(24⁻)	1089.4 *5*	100	8454.5	(22⁻)			
9766.7	(24⁻)	656.0 *5*	100 *10*	9110.8	(23⁻)			
		1282.4 *5*	60 *6*	8484.3	(22⁻)			
9899.4	(25⁻)	1061.2 *5*	100	8838.2	23⁻			
10044.3	26⁺	1190.8 *3*	100	8853.5	24⁺	E2	0.00141	α(K)=0.00120 *4*; α(L)=0.00016 *1*
10457.0	(25⁻)	1346.2 *5*	100	9110.8	(23⁻)			
10991.0	(27⁻)	1091.6 *5*	100	9899.4	(25⁻)			
11286.9	(28⁺)	1242.6[b] *5*	100	10044.3	26⁺	Q		
11391.2	(28⁺)	1347 *1*		10044.3	26⁺			
12529.5	(30⁺)	1242.6[b] *5*	100	11286.9	(28⁺)	Q		
12827.9	(30⁺)	1437 *3*		11391.2	(28⁺)			
		1541 *1*		11286.9	(28⁺)			
13838.5	(32⁺)	1309.0 *5*	100	12529.5	(30⁺)	Q		
15216.2	(34⁺)	1377.7 *5*	100	13838.5	(32⁺)			
16657.8	(36⁺)	1441.6 *5*	100	15216.2	(34⁺)			
18186.4	(38⁺)	1528.6 *5*	100	16657.8	(36⁺)			
19790.2	(40⁺)	1603.8 *5*	100	18186.4	(38⁺)			
1013.0+x		1013 *1*		x				

$^{132}_{58}Ce_{74}$-15

Adopted Levels, Gammas (continued)

γ(^{132}Ce) (continued)

E_i(level)	J_i^π	E_γ †	I_γ †	E_f	J_f^π	Mult. ‡	Comments
2107.0+x		1094 *1*		1013.0+x			
3308.0+x		1201 *1*		2107.0+x			
4616.0+x		1308 *1*		3308.0+x			
6027.0+x		1411 *1*		4616.0+x			
7551.0+x		1524 *1*		6027.0+x			
9170+x		1619 *1*		7551.0+x			
10886+x		1716 *1*		9170+x			
12700+x		1814 *1*		10886+x			
770.80+y	J+2	770.8 *1*	0.10& *1*	y	J≈(20$^+$)	Q	
1580.10+y	J+4	809.3 *1*	0.67& *1*	770.80+y	J+2	E2	B(E2)(W.u.)=700 *240*
2445.81+y	J+6	865.7 *1*	0.76& *1*	1580.10+y	J+4	E2	B(E2)(W.u.)=470 *110*
3375.41+y	J+8	929.6 *1*	1.00&	2445.81+y	J+6	E2	B(E2)(W.u.)=700 *+500−200*
4371.31+y	J+10	995.9 *1*	0.95& *1*	3375.41+y	J+8	E2	B(E2)(W.u.)>860
5433.02+y	J+12	1061.7 *1*	0.89& *1*	4371.31+y	J+10	E2	B(E2)(W.u.)>500
6561.8+y	J+14	1128.8 *1*	0.82& *1*	5433.02+y	J+12	E2	B(E2)(W.u.)=600 *+600−200*
7758.2+y	J+16	1196.4 *1*	0.80& *1*	6561.8+y	J+14	E2	B(E2)(W.u.)=600 +2400−300
9023.8+y	J+18	1265.6 *1*	0.72& *1*	7758.2+y	J+16	E2	B(E2)(W.u.)>300
10360.6+y	J+20	1336.8 *1*	0.61& *1*	9023.8+y	J+18	E2	B(E2)(W.u.)>480
11771.4+y	J+22	1410.7 *1*	0.56& *1*	10360.6+y	J+20	E2	B(E2)(W.u.)>260
13259.5+y	J+24	1488.1 *1*	0.44& *1*	11771.4+y	J+22	E2	B(E2)(W.u.)>200
14828.9+y	J+26	1569.4 *2*	0.40& *1*	13259.5+y	J+24	E2	B(E2)(W.u.)>60
16483.8+y	J+28	1654.9 *2*	0.30& *1*	14828.9+y	J+26	E2	B(E2)(W.u.)>160
18227.7+y	J+30	1743.9 *2*	0.25& *1*	16483.8+y	J+28	Q	
20063.8+y	J+32	1836.1 *2*	0.21& *1*	18227.7+y	J+30	Q	
21994.8+y	J+34	1931.0 *2*	0.15& *1*	20063.8+y	J+32	Q	
24022.0+y	J+36	2027.2 *3*	0.09& *1*	21994.8+y	J+34	Q	
26144.8+y	J+38	2122.8 *4*	0.05& *1*	24022.0+y	J+36	Q	
28360.6+y	J+40	2215.7 *5*	0.03& *1*	26144.8+y	J+38		
30663.6+y	J+42	2303 *1*	0.02& *1*	28360.6+y	J+40		
33081.6+y	J+44	2418 *1*	<0.01&	30663.6+y	J+42		
35585.6+y	J+46	2504 *1*	<0.01&	33081.6+y	J+44		
38187.7+y	J+48	2602 *1*	<0.01&	35585.6+y	J+46		
724.40+z	J1+2	724.4 *1*	0.47& *1*	z	J1≈(19$^-$)	Q	
1518.70+z	J1+4	794.3 *1*	0.70& *2*	724.40+z	J1+2	Q	
2384.59+z	J1+6	865.9 *1*	0.99& *2*	1518.70+z	J1+4	Q	

$^{132}_{58}Ce_{74}$-16

Adopted Levels, Gammas (continued)

γ(^{132}Ce) (continued)

E_i(level)	J_i^π	E_γ †	I_γ †	E_f	J_f^π	Mult. ‡
3313.60+z	J1+8	929.0 *1*	0.97 & *2*	2384.59+z	J1+6	Q
4314.39+z	J1+10	1000.8 *1*	1.00 &	3313.60+z	J1+8	Q
5382.89+z	J1+12	1068.5 *1*	0.80 & *2*	4314.39+z	J1+10	Q
6521.3+z	J1+14	1138.4 *1*	0.86 & *2*	5382.89+z	J1+12	Q
7732.6+z	J1+16	1211.3 *1*	0.78 & *2*	6521.3+z	J1+14	(Q)
9021.1+z	J1+18	1288.5 *1*	0.67 & *2*	7732.6+z	J1+16	Q
10385.6+z	J1+20	1364.5 *1*	0.53 & *2*	9021.1+z	J1+18	Q
11839.5+z	J1+22	1453.9 *2*	0.47 & *2*	10385.6+z	J1+20	Q
13377.8+z	J1+24	1538.3 *2*	0.46 & *2*	11839.5+z	J1+22	Q
14999.3+z	J1+26	1621.5 *2*	0.17 & *2*	13377.8+z	J1+24	Q
16729.5+z	J1+28	1730.1 *3*	0.13 & *2*	14999.3+z	J1+26	Q
18545.6+z	J1+30	1816.1 *3*	0.10 & *2*	16729.5+z	J1+28	
20452.2+z	J1+32	1906.6 *4*	0.09 & *2*	18545.6+z	J1+30	
22451.1+z	J1+34	1998.9 *5*	0.06 & *2*	20452.2+z	J1+32	
24536.7+z	J1+36	2085.6 *5*	0.05 & *2*	22451.1+z	J1+34	
890.19+u	J2+2	890.2 *1*	0.50 & *2*	u	J2≈(24$^-$)	
1839.79+u	J2+4	949.6 *1*	0.71 & *2*	890.19+u	J2+2	Q
2857.29+u	J2+6	1017.5 *1*	0.76 & *2*	1839.79+u	J2+4	
3945.70+u	J2+8	1088.4 *1*	0.72 & *2*	2857.29+u	J2+6	Q
5107.09+u	J2+10	1161.4 *1*	0.84 & *2*	3945.70+u	J2+8	Q
6335.28+u	J2+12	1228.2 *1*	0.90 & *2*	5107.09+u	J2+10	Q
7640.6+u	J2+14	1305.3 *1*	1.00 &	6335.28+u	J2+12	(Q)
9024.1+u	J2+16	1383.5 *1*	0.85 & *2*	7640.6+u	J2+14	(Q)
10489.5+u	J2+18	1465.4 *1*	0.70 & *2*	9024.1+u	J2+16	(Q)
12030.6+u	J2+20	1541.1 *2*	0.43 & *2*	10489.5+u	J2+18	(Q)
13642.1+u	J2+22	1611.5 *2*	0.30 & *2*	12030.6+u	J2+20	(Q)
15307.5+u	J2+24	1665.4 *3*	0.21 & *2*	13642.1+u	J2+22	
17043.1+u	J2+26	1735.6 *3*	0.24 & *2*	15307.5+u	J2+24	
18858.3+u	J2+28	1815.2 *3*	0.16 & *2*	17043.1+u	J2+26	
20743.4+u	J2+30	1885.0 *4*	0.17 & *2*	18858.3+u	J2+28	
22697.1+u	J2+32	1953.7 *4*	0.12 & *2*	20743.4+u	J2+30	

$^{132}_{58}Ce_{74}$-17

Adopted Levels, Gammas (continued)

$\gamma(^{132}Ce)$ (continued)

E_i(level)	J_i^π	E_γ †	I_γ †	E_f	J_f^π
24697.8+u	J2+34	2000.7 *4*	0.12& *2*	22697.1+u	J2+32
26752.0+u	J2+36	2054.2 *5*	0.03& *1*	24697.8+u	J2+34

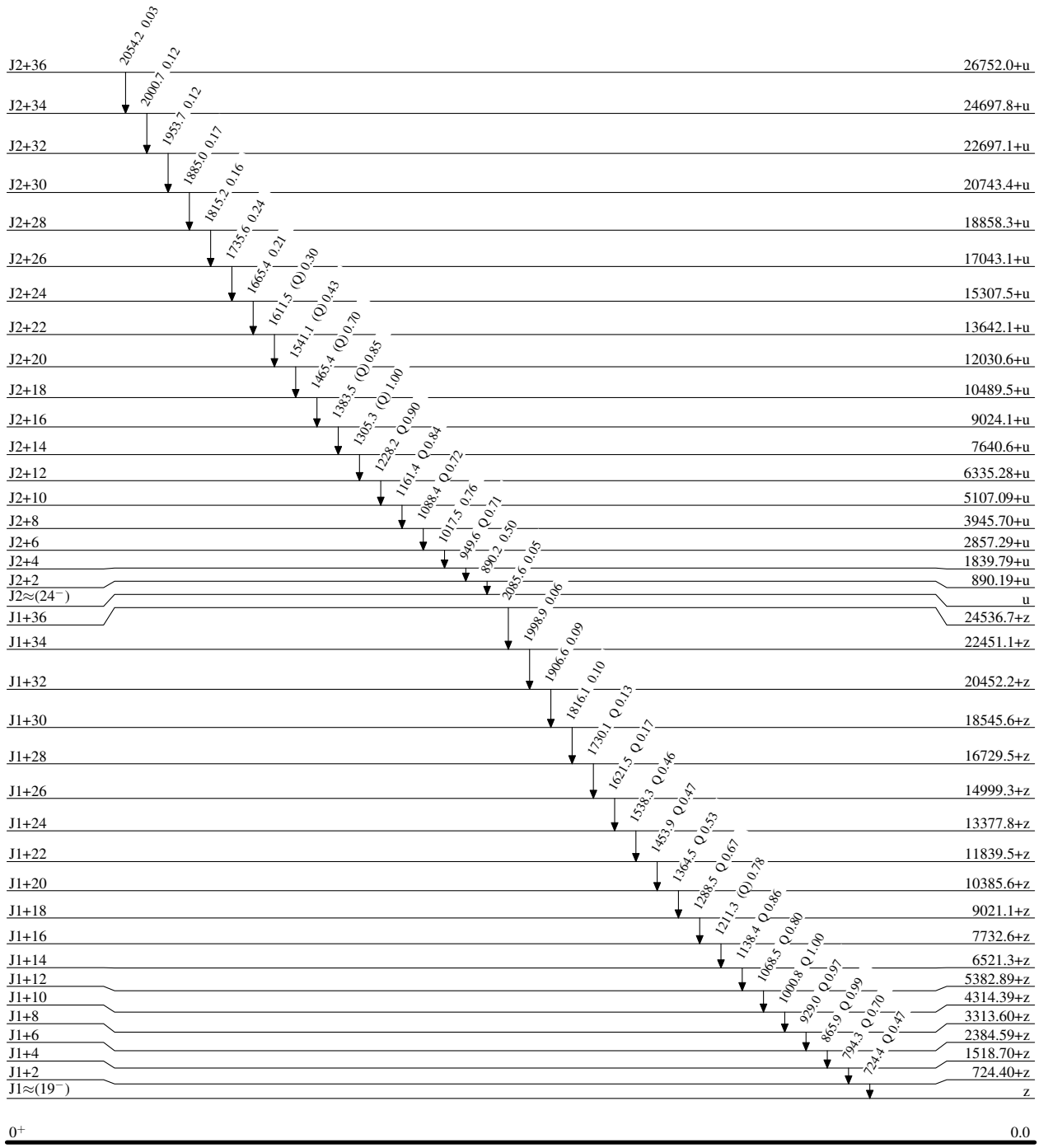
† Weighted averages taken when values are available from different reactions or studies.
‡ From $\gamma\gamma(\theta)$, $\gamma\gamma(\theta)$(DCO) and γ(lin pol); mult=Q (most likely E2) corresponds to ΔJ=2 implied from $\gamma\gamma(\theta)$ data, and mult=D or D+Q to ΔJ=1 or in rare cases to ΔJ=0. For SD band trasitions, assignments are from from $\gamma\gamma(\theta)$; RUL used when level lifetimes are known in SD-1 band.
# Primarily from $\gamma\gamma(\theta)$ in ^{132}Pr ε decay.
@ From in-beam γ-ray study (1993LuZX).
& Relative intensity within the SD band.
a Total theoretical internal conversion coefficients, calculated using the BrIcc code (2008Ki07) with Frozen orbital approximation based on γ-ray energies, assigned multipolarities, and mixing ratios, unless otherwise specified.
b Multiply placed.
c Placement of transition in the level scheme is uncertain.

$^{132}_{58}Ce_{74}$-18

Adopted Levels, Gammas

Level Scheme

Intensities: Relative photon branching from each level

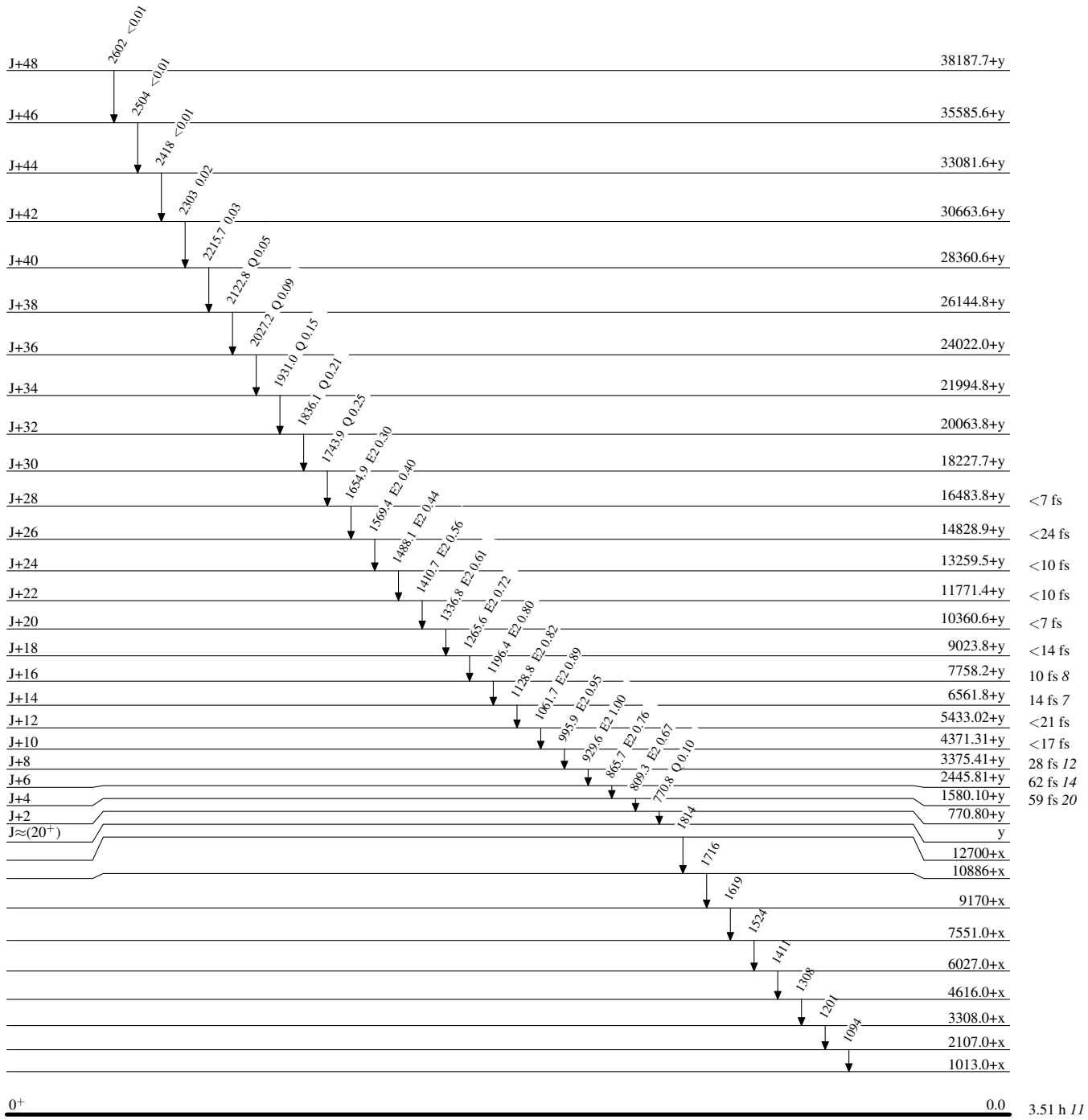


$^{132}_{58}Ce_{74}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level

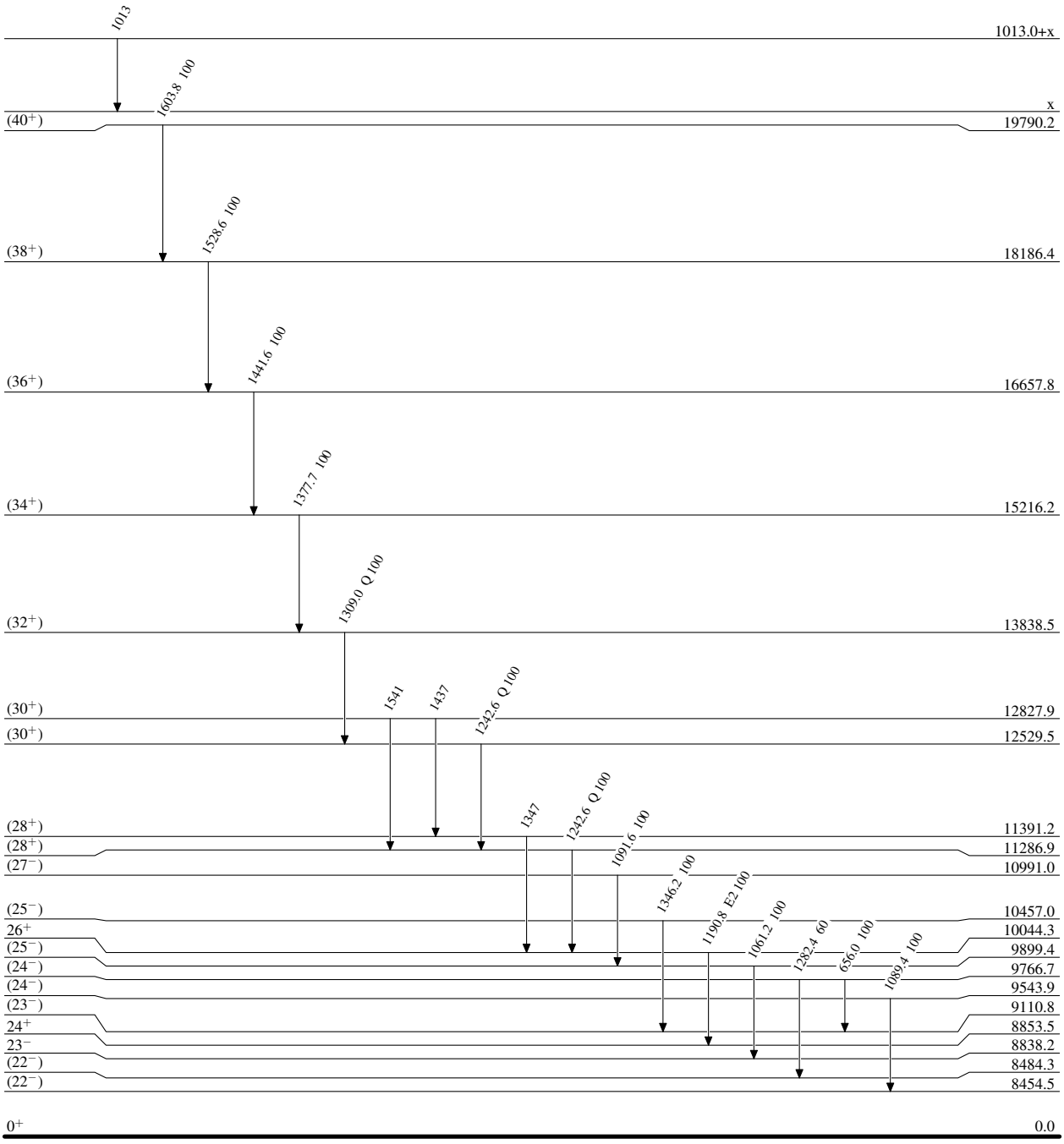


$^{132}_{58}Ce_{74}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level

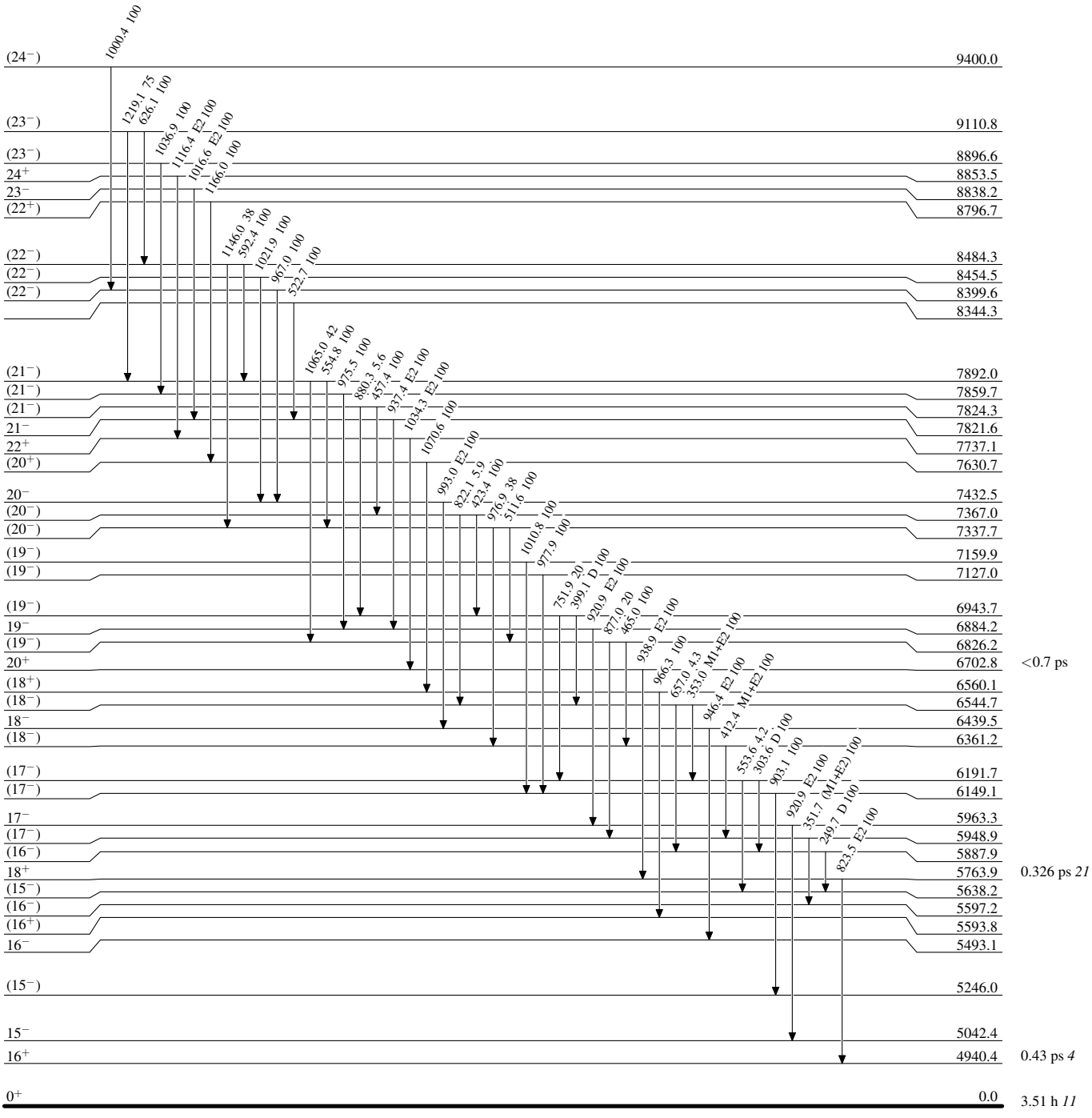


$^{132}_{58}Ce_{74}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level

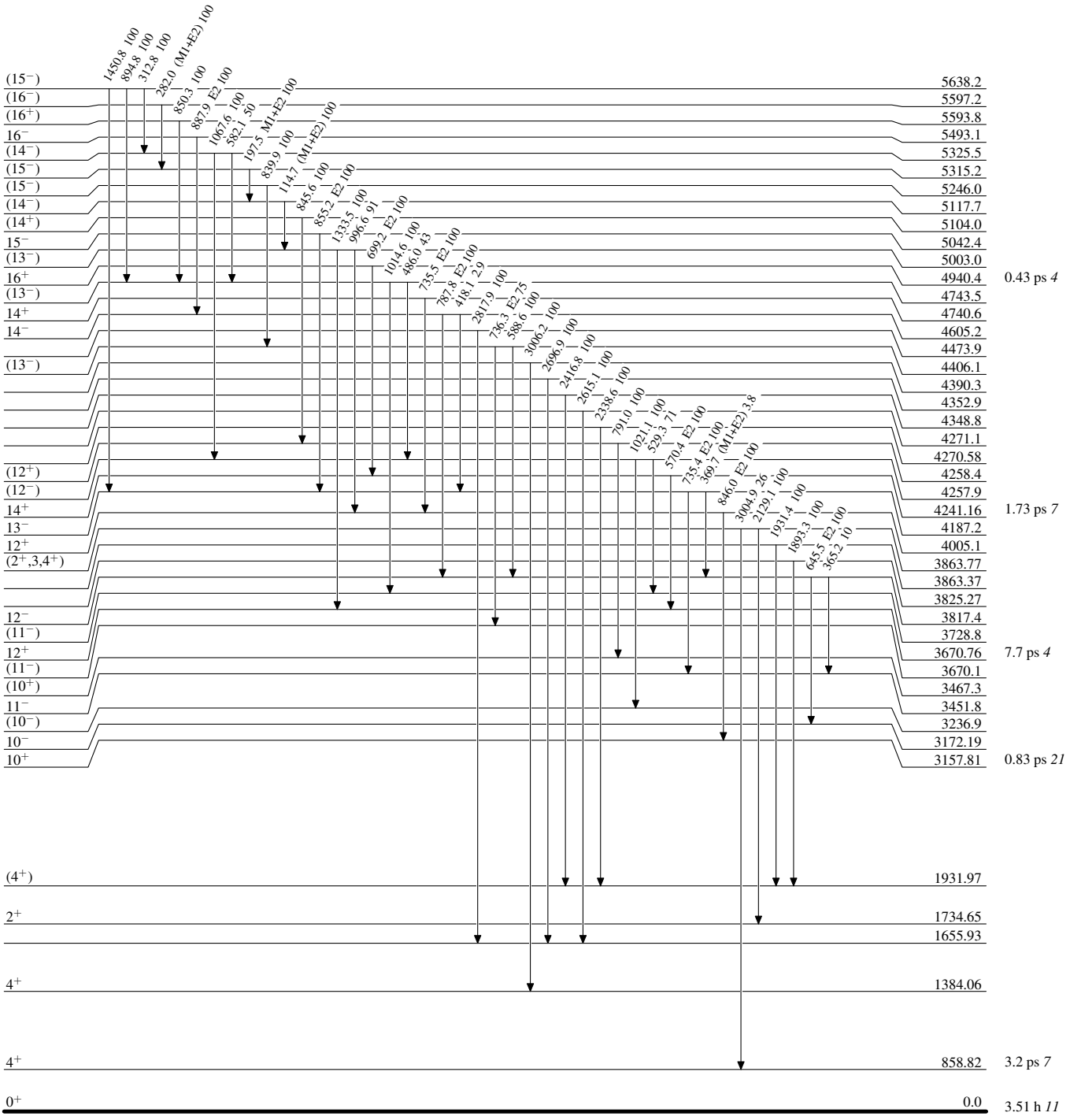


$^{132}_{58}Ce_{74}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level

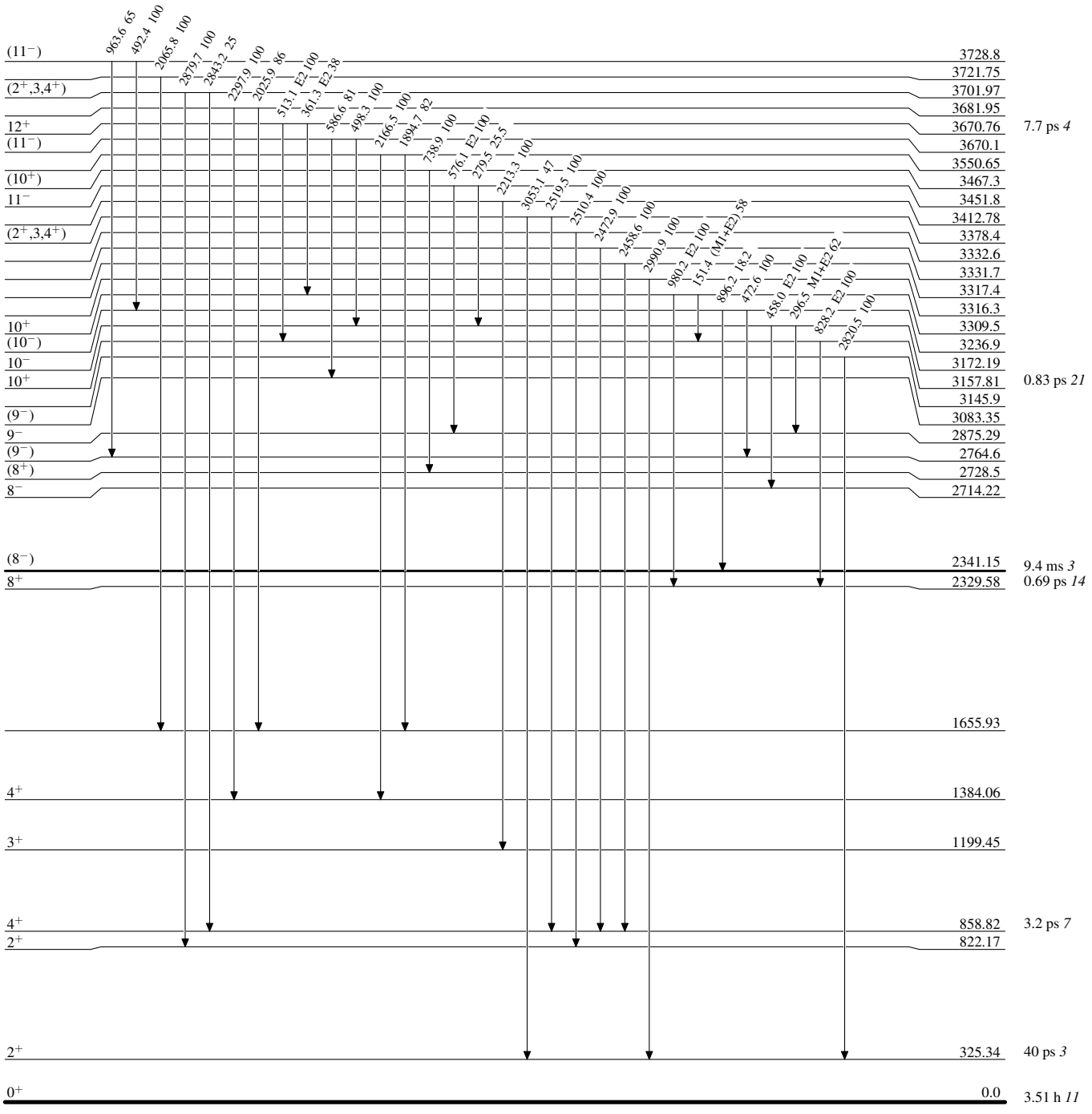


$^{132}_{58}Ce_{74}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level

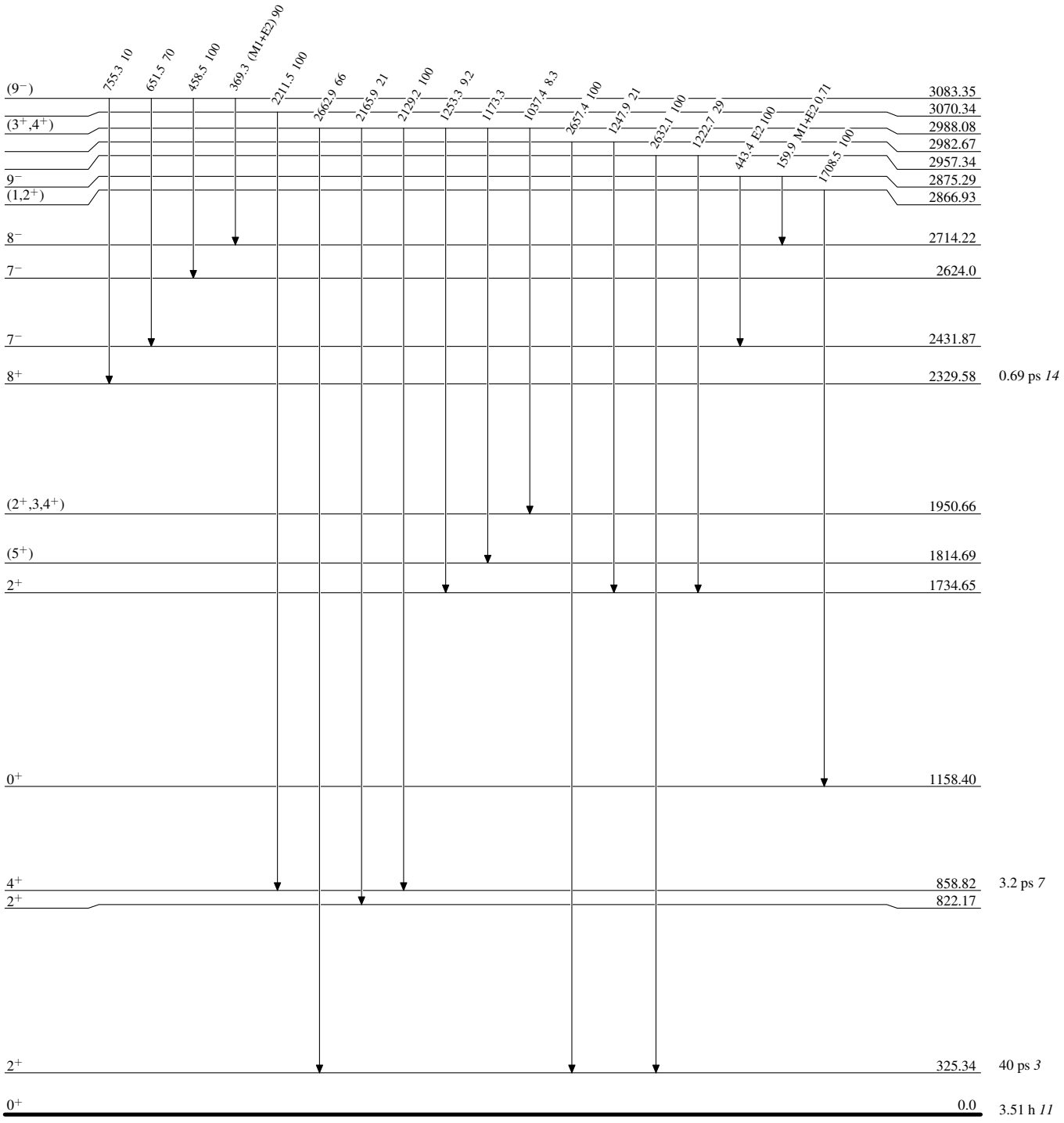


$^{132}_{58}Ce_{74}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level

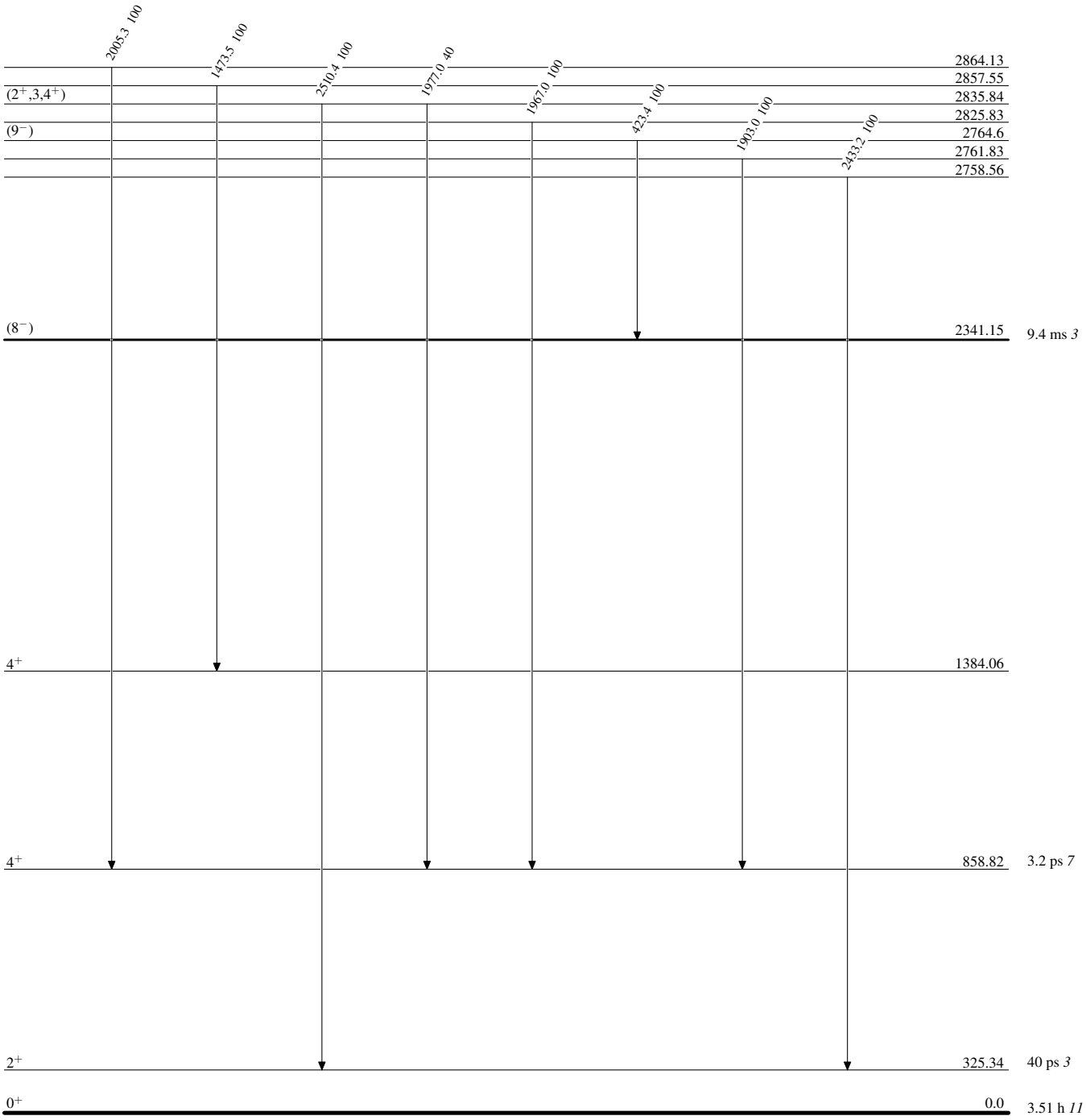


$^{132}_{58}Ce_{74}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level

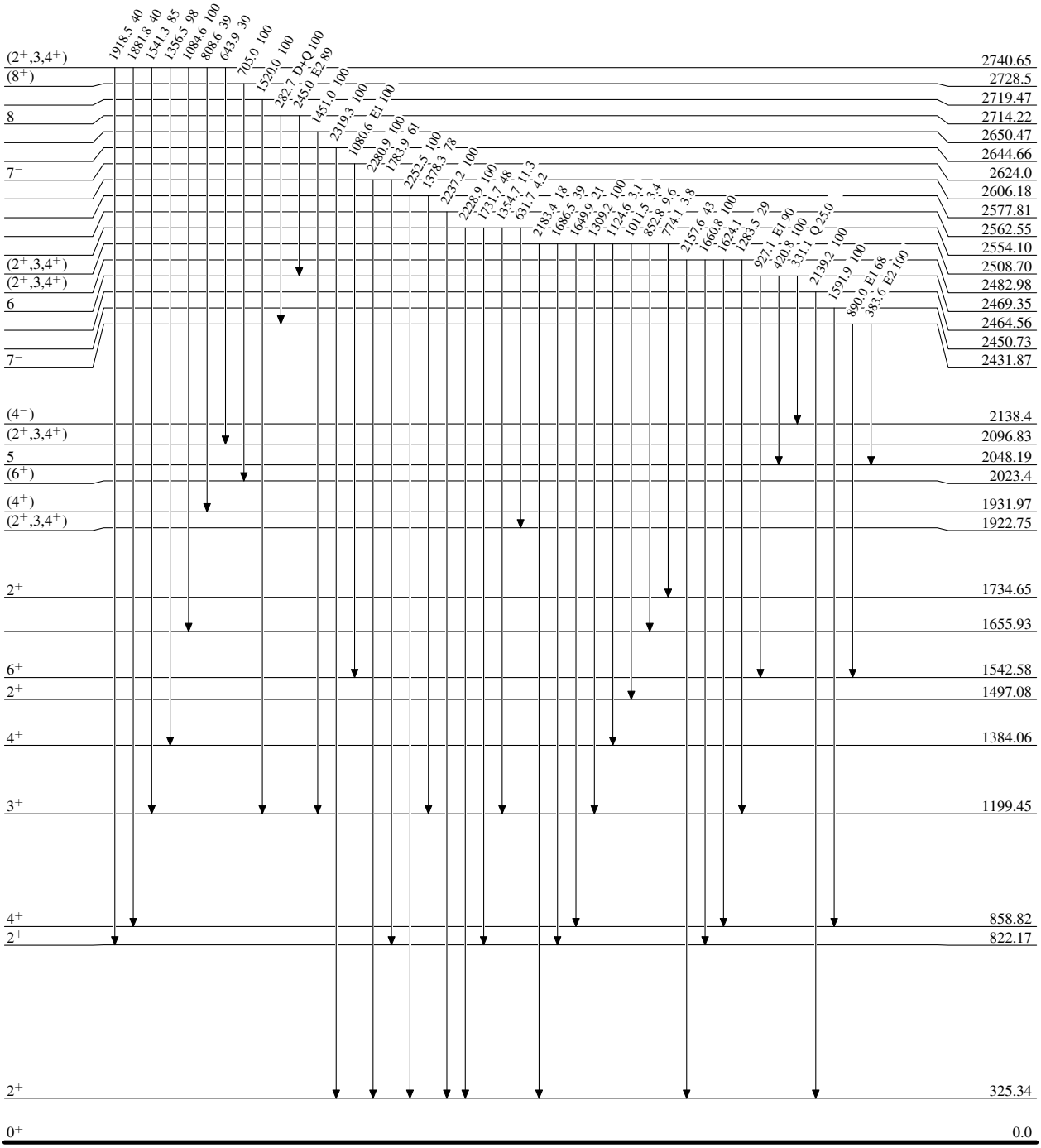


$^{132}_{58}Ce_{74}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level



$^{132}_{58}Ce_{74}$

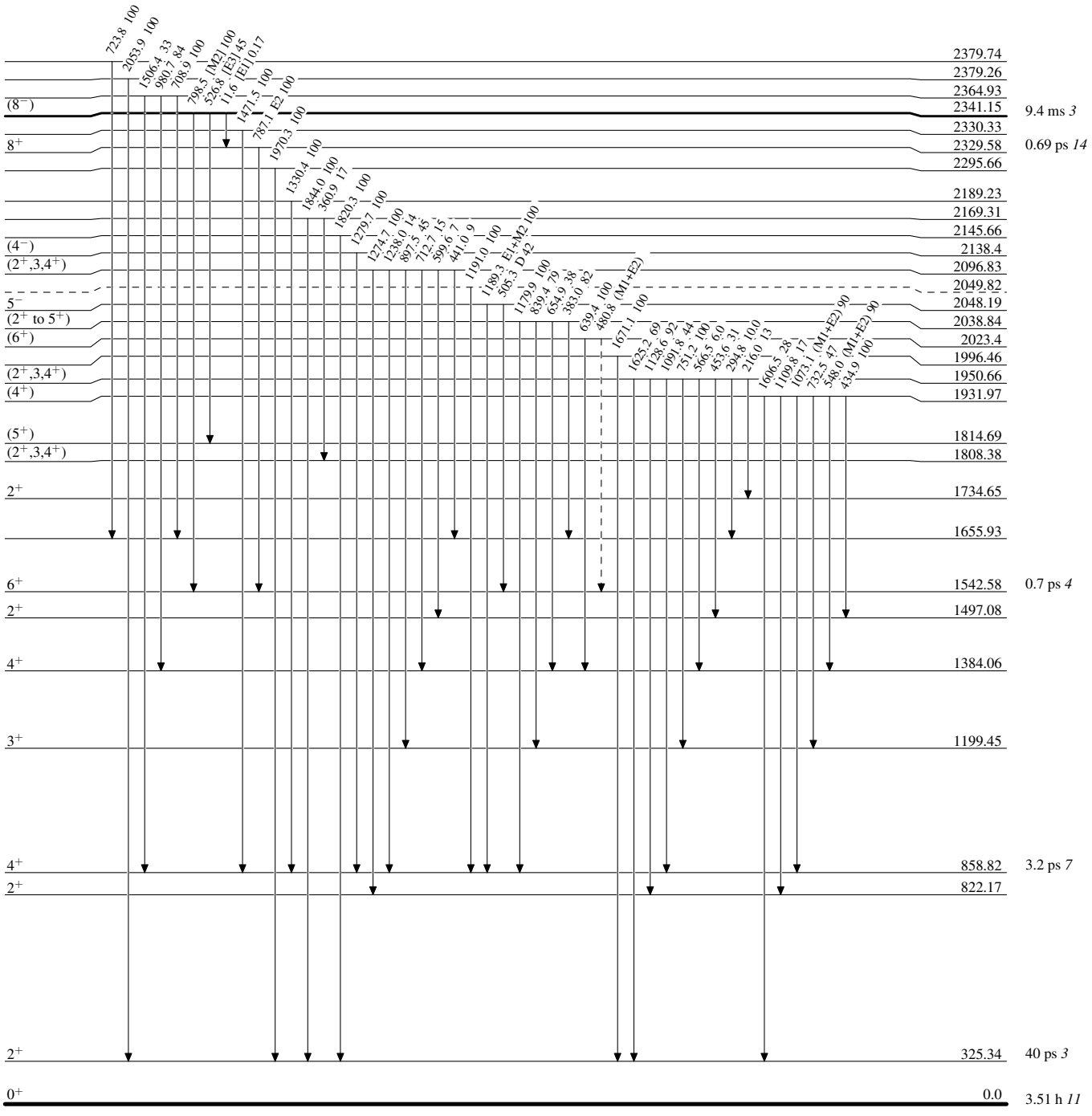
Adopted Levels, Gammas

Legend

Level Scheme (continued)

Intensities: Relative photon branching from each level

γ Decay (Uncertain)

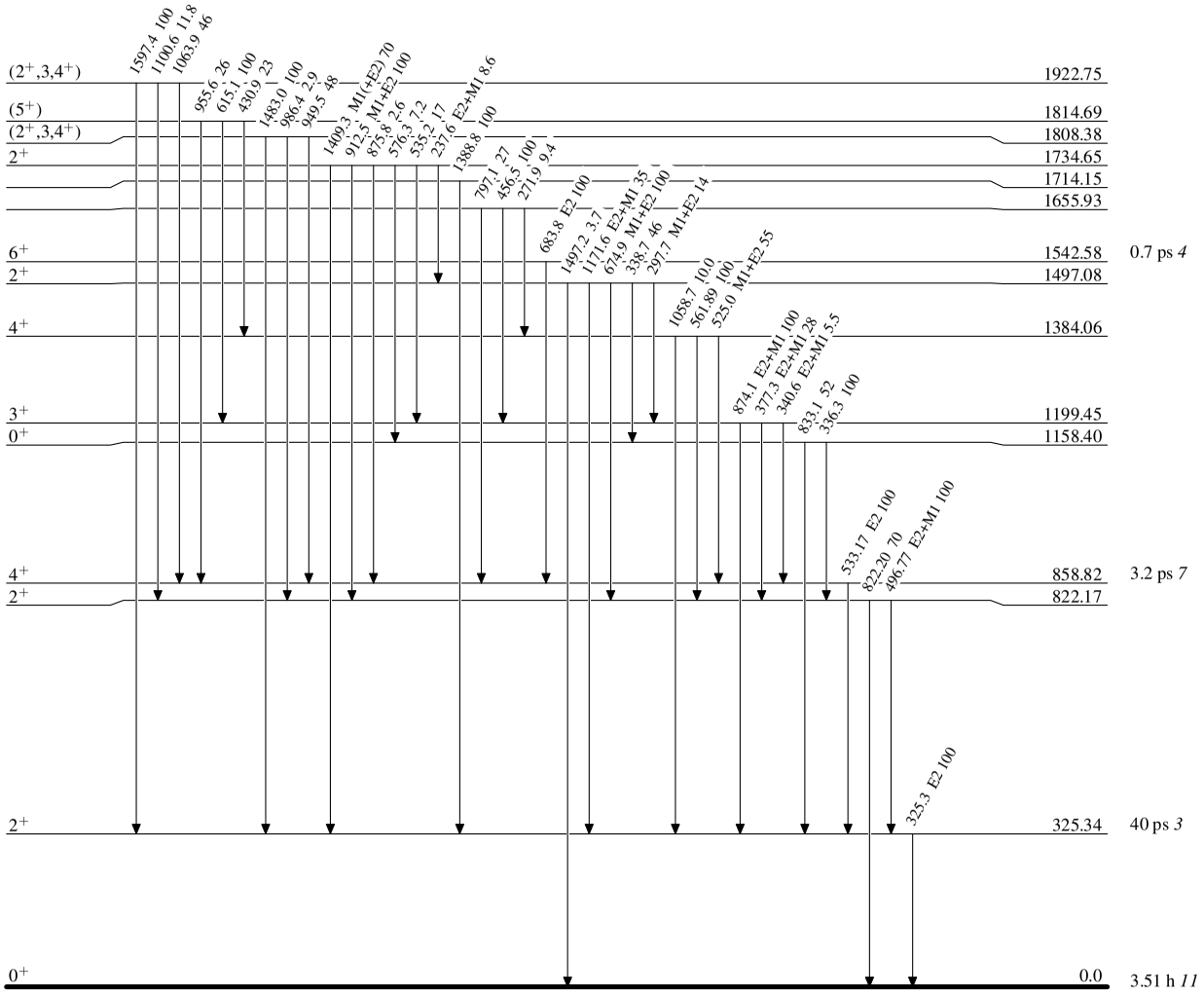


$^{132}_{58}Ce_{74}$

Adopted Levels, Gammas

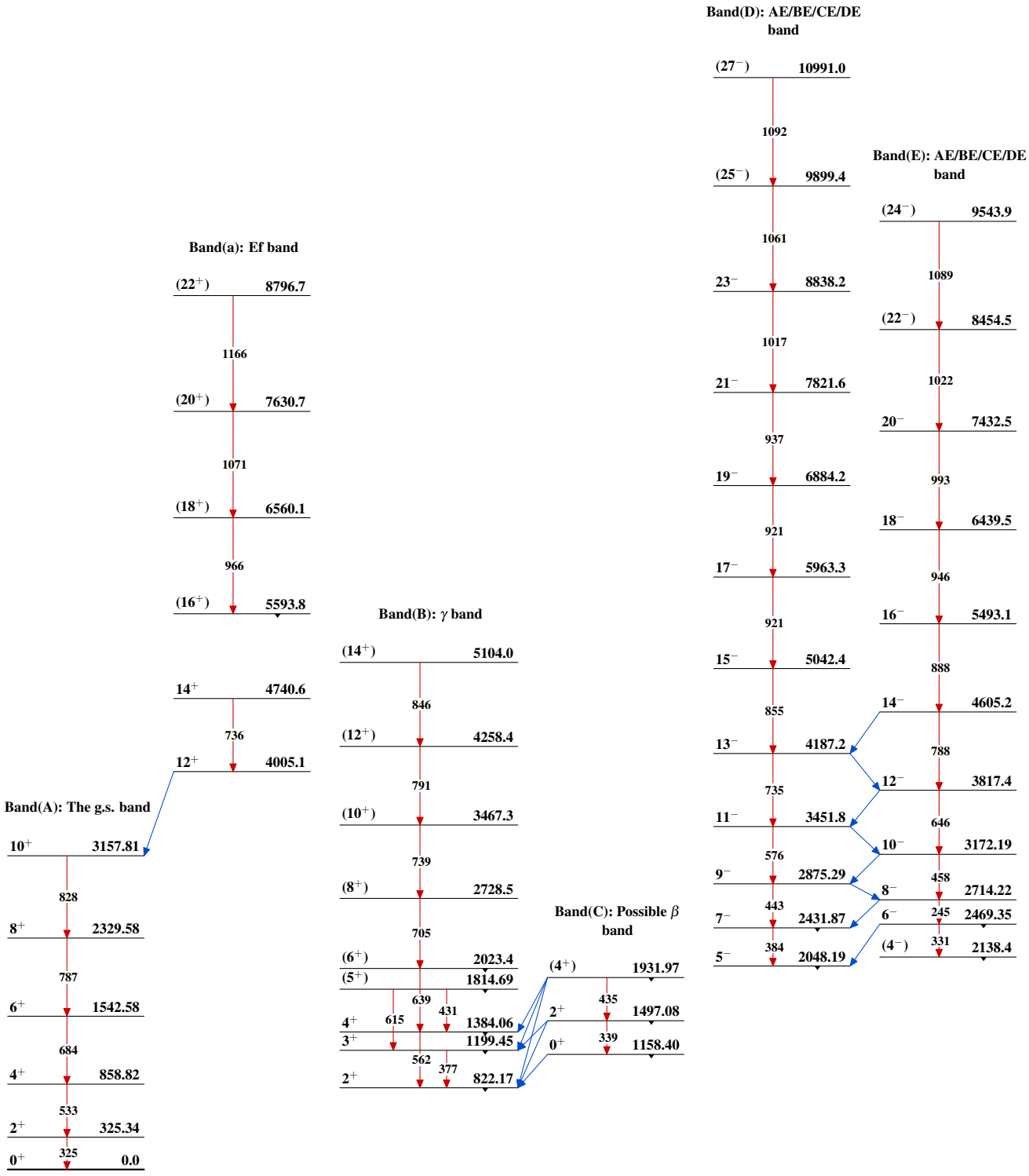
Level Scheme (continued)

Intensities: Relative photon branching from each level



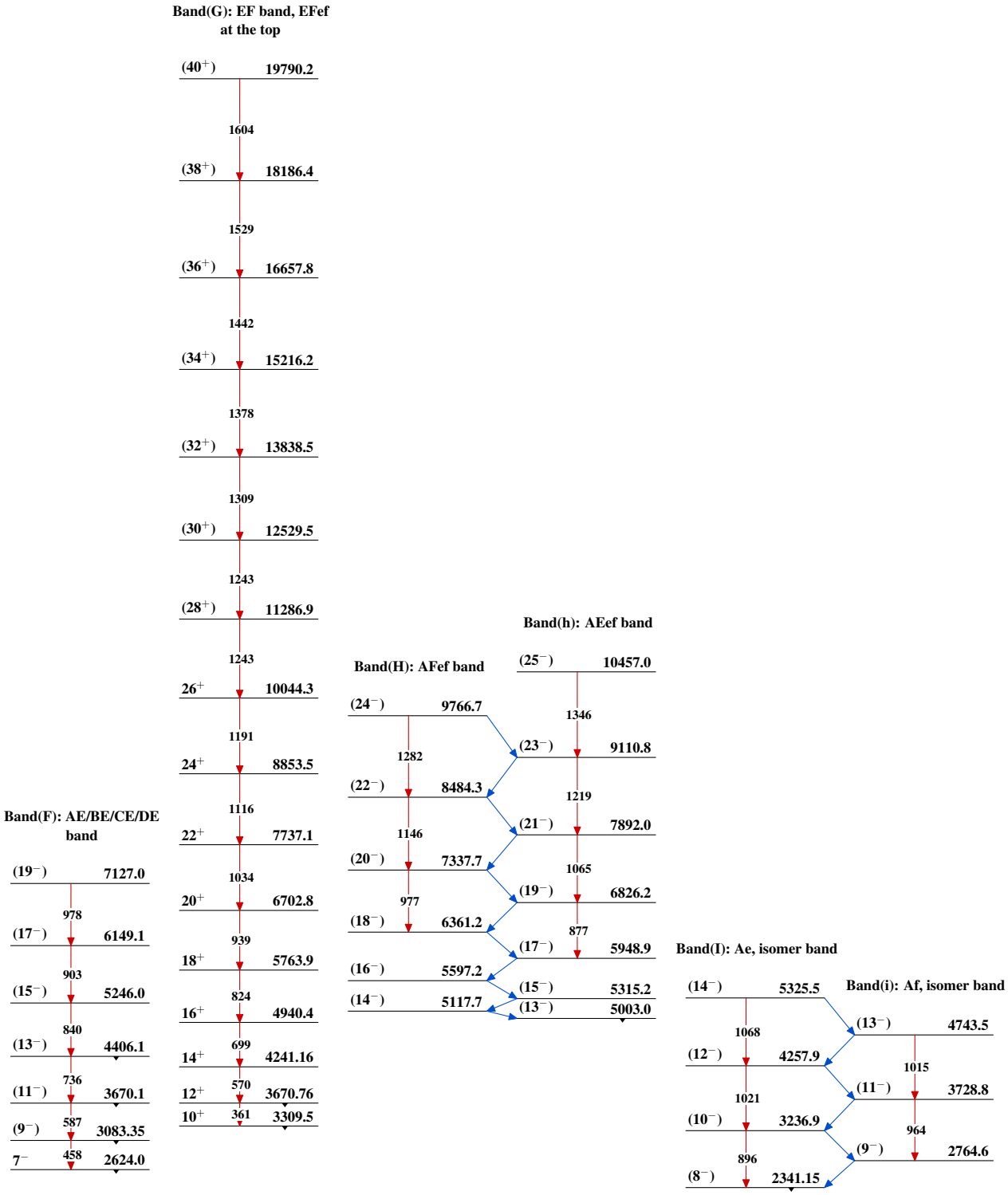
$^{132}_{58}Ce_{74}$

Adopted Levels, Gammas

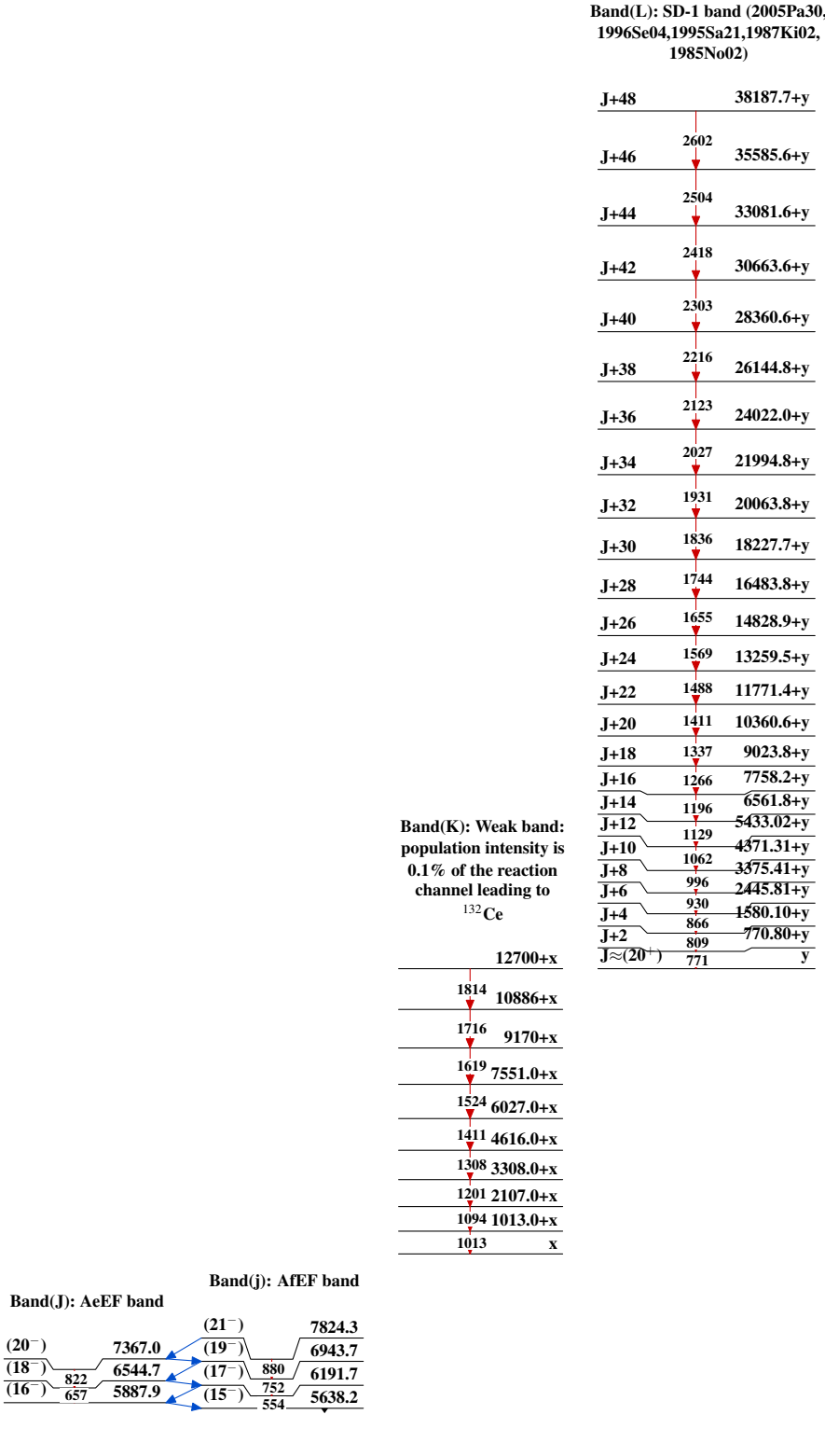


$^{132}_{58}Ce_{74}$

Adopted Levels, Gammas (continued)

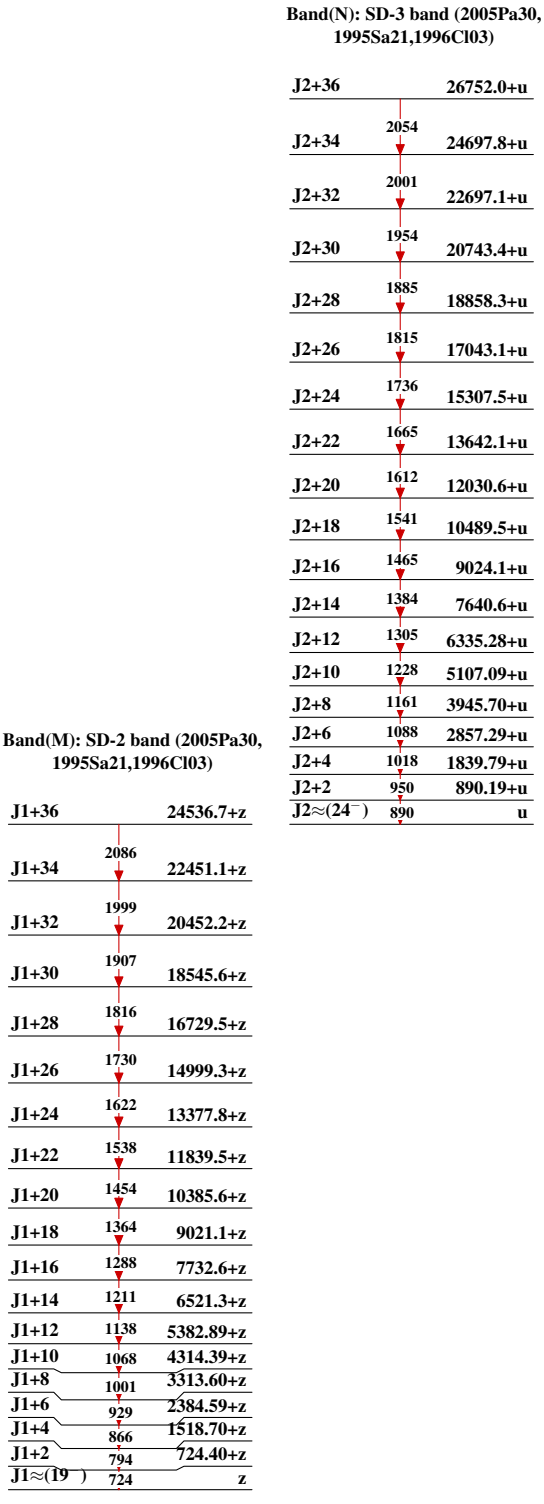


Adopted Levels, Gammas (continued)



$^{132}_{58}Ce_{74}$

Adopted Levels, Gammas (continued)



$^{132}_{58}Ce_{74}$